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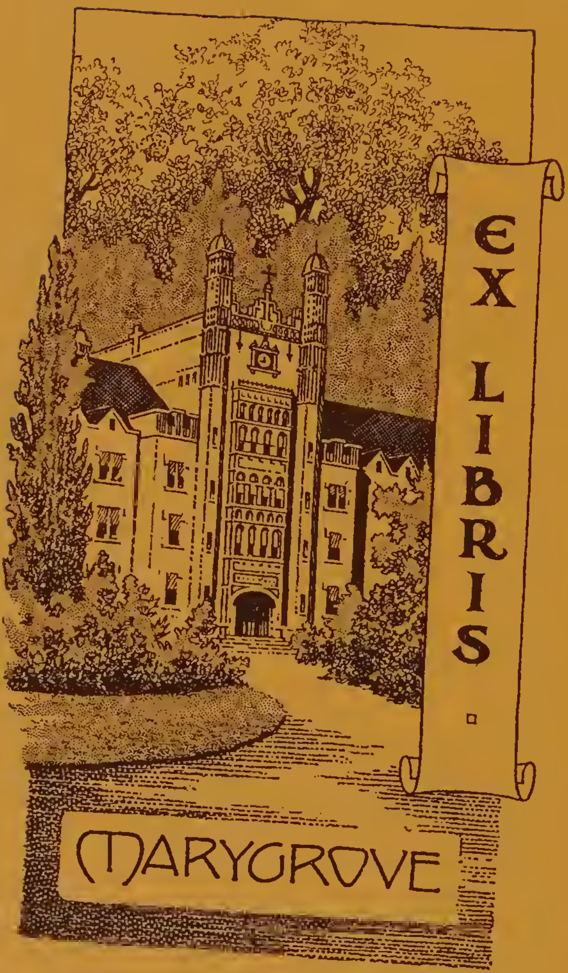
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NATIONAL SOCIETY FOR THE STUDY OF EDUCATION

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SUMMARY OF XXIII YEARBOOK, BOTH PARTS

TWENTY-THIRD YEARBOOK, PART I (1924)

THE EDUCATION OF GIFTED CHILDREN

B. T. Baldwin, Helen Davis, Lillie R. Ernst, F. N. Freeman, T. S. Henry, Ernest Horn, H. O. Rugg, L. O. Smith, L. M. Terman, C. W. Waddle, and G. M. Whipple, chairman (the Society's Committee)

assisted by

J. R. Benson, E. R. Breslich, Arthur Brogue, Margaret V. Cobb, R. R. Cook, J. C. DeVoss, Anna M. Engel, E. M. Haney, H. C. Hill, K. J. Hoke, Leta A. Hollingworth, A. J. Martin, E. L. Moyer, Mary L. Patrick, W. C. Reavis, Grace A. Taylor, H. G. Townsend, C. W. Washburne, and W. L. Uhl

This extensive yearbook (443 pages of text) may be regarded as an attempt to gain further light and a more varied and comprehensive survey of the problem discussed in the Nineteenth Yearbook, Part II. Section I contains various reports and summaries of the more general aspects of the problem—the history of the movement for special training of the gifted, methods of locating such children, problems of organization and administration, the adaptation of the curriculum, non-intellectual traits of gifted children, etc. Section II presents numerous special studies of such children, with respect to their physical and mental traits, their educational achievements, their subsequent careers in the high school and university, and the outcomes of various school experiments in providing special training for them. Section III is a valuable annotated bibliography of 453 titles.

TWENTY-THIRD YEARBOOK, PART II (1924)

VOCATIONAL GUIDANCE AND VOCATIONAL EDUCATION FOR THE INDUSTRIES

A. H. Edgerton and Fifty Collaborators

This yearbook is one of the largest ever undertaken by the Society. The material for it was gathered and organized by Professor Edgerton from many sources and with the aid of half a hundred contributors. It affords, therefore, a comprehensive exposition of the present status of the branch of educational endeavor to which it is devoted. Section I, which deals with vocational guidance, gives detailed accounts of what is already being done in various city schools systems, both large and small, and in colleges and universities, also accounts of methods of training vocational counselors. Section II deals with vocational education for the industries. It shows what is being done in typical part-time, or continuation, schools and in typical day and evening industrial courses in smaller cities. Further, there is discussion of the training of workers in industry, the training of foremen, and the training of teachers for vocational industrial schools. Both sections are supplied with bibliographies.

THE
TWENTY-THIRD YEARBOOK

OF THE

NATIONAL SOCIETY FOR THE STUDY OF EDUCATION

PART I

REPORT OF THE SOCIETY'S COMMITTEE ON THE EDUCATION OF GIFTED CHILDREN

Edited by
GUY M. WHIPPLE, Ph. D.
Secretary

PUBLIC SCHOOL PUBLISHING COMPANY
BLOOMINGTON, ILLINOIS
1924

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TABLE OF CONTENTS

PAGE
Preface VI
Membership of the Society's Committee on the Education of Gifted Children VII

SECTION I. GENERAL REPORTS AND SUMMARIES

CHAP.
I. HISTORICAL AND INTRODUCTORY 1
Guy M. Whipple, School of Education, University of Michigan
II. METHODS OF SELECTING SUPERIOR OR GIFTED CHILDREN 25
Bird T. Baldwin, Director, Child Welfare Research Station, State University of Iowa
III. PROBLEMS OF ORGANIZATION 49
IV. SOME ADMINISTRATIVE PHASES IN THE EDUCATION OF GIFTED CHILDREN 65
Leon O. Smith, Assistant Superintendent of Schools, Omaha, Nebraska
V. THE CURRICULUM FOR THE GIFTED: SOME PRINCIPLES AND AN ILLUSTRATION 73
Ernest Horn, State University of Iowa, Iowa City, Iowa
VI. THE CURRICULUM FOR GIFTED CHILDREN 91
Harold O. Rugg, The Lincoln School of Teachers College, Columbia University, New York City
VII. PERSONAL AND SOCIAL CHARACTERISTICS OF GIFTED CHILDREN 123
Helen Davis, Director of Measurements and Special Education, Jackson, Michigan
VIII. THE DEMOCRATIC IDEA AND THE EDUCATION OF GIFTED CHILDREN 145
Harvey G. Townsend, Professor of Education, Smith College, Northampton, Massachusetts

SECTION II. SPECIAL STUDIES

IX. THE PHYSICAL AND MENTAL TRAITS OF GIFTED CHILDREN 155
Lewis M. Terman, Professor of Educational Psychology, Stanford University, California
X. THE EDUCATIONAL ACHIEVEMENTS OF GIFTED CHILDREN 169
Lewis M. Terman, Stanford University, California, and
James C. DeVoss, State Teachers College, San Jose, California
XI. CASE STUDIES OF GIFTED CHILDREN 185
Charles W. Waddle, Professor of Education, Southern Branch, University of California, Los Angeles, California
XII. MISCELLANEOUS EXPERIMENTAL AND STATISTICAL STUDIES OF GIFTED CHILDREN 209
A. Introduction and Summary 209
Frank N. Freeman, School of Education, University of Chicago
B. Studies of Physical Condition and Growth
B1. Size and Strength of Children Who Test Above 135 I.Q. 221
Leta S. Hollingworth, and Grace A. Taylor, Teachers College, Columbia University
B2. The Health of the Intellectually Superior Pupil 238
K. J. Hoke, Dean of the College of William and Mary, Williamsburg, Virginia
C. The Attainments of Gifted Children
C1. The Attainments of Gifted Children Under Individual Instruction 247
Carleton W. Washburne, Superintendent of Schools, Winnetka, Illinois

PAGE
C2. Some Attainments of Gifted Children in Segregated Classes at Louisville 262
Mary L. Patrick, Director, Bureau of Educational Measurements, Louisville, Kentucky
C3. Standard Achievement Tests with a Group of Gifted Children 275
Margaret V. Cobb and Grace A. Taylor, Teachers College, Columbia University
C4. A Comparison of Selected Groups with Mixed Classes. . . . 290
J. R. Benson, Principal, Eliot School, St. Louis, Missouri

D. Comparison of Attainments of Gifted Children in Special Classes with Gifted Children in Ordinary Classes

D1. Comparison of Class Ratings of Pupils in Special Advanced Classes with Accelerated Pupils in Regular Classes in the Detroit Public Schools 297
Anna M. Engel, Assistant Supervisor of Special Education, Detroit, Michigan
D2. A Study of the Results of Homogeneous Grouping of Abilities in High-School Classes 302
R. R. Cook, Principal of Theodore Roosevelt High School, Des Moines, Iowa
D3. A Study of the Effects of Classification by Intelligence Tests 313
Edward L. Moyer, Principal of Marquette High School, Marquette, Michigan

E. Studies of the Careers of Accelerated Children

E1. Academic Records of Accelerated Students. . . . 323
Earl M. Haney, Washington High School, Milwaukee, Wisconsin, and
Willis L. Uhl, University of Wisconsin, Madison, Wis.
E2. A Study of the Subsequent Standing of Specially Promoted Pupils 333
A. H. Martin, Principal of the Lincoln School, Long Beach, California

F. Studies of Gifted Children in the High School

F1. The Administration of the Superior Students in the University of Chicago High School. . . . 355
W. C. Reavis, Principal of the University of Chicago High School
F2. Differentiated Courses for Pupils of Superior Ability in the J. Sterling Morton High School. . . . 366
Arthur Brogue, Director of Educational Measurements, J. Sterling Morton High School, Cicero, Illinois
F3. The Needs of the Superior Pupil in the Study of Mathematics 372
E. R. Breslich, University of Chicago High School
F4. Providing for Superior Students in the Social Studies. . . . 379
Howard Copeland Hill, University of Chicago High School

SECTION III. BIBLIOGRAPHY

XIII. ANNOTATED BIBLIOGRAPHY ON GIFTED CHILDREN AND THEIR EDUCATION 389
T. S. Henry, Western State Normal School, Kalamazoo, Michigan
Information about the National Society for the Study of Education. . . . 444

EDITOR'S PREFACE

The conditions under which this *Yearbook* has been developed are set forth in the opening chapter—"Historical and Introductory." At the risk of being repetitious, however, it may be stated here that despite extended correspondence and two sessions for the personal interchange of views, the Committee has not found itself in agreement upon some of the fundamental principles involved in the education of gifted children. The reader will doubtless feel convinced that the presentation of individual and independent convictions has, nevertheless, a certain merit when newer educational movements are under discussion. We suggest that this volume be considered as a preliminary report. We trust, too, speaking as chairman of the committee, that the Society may feel disposed to continue the Committee in the hope that later on it may be possible to issue another *Yearbook* on the same topic that shall include a definite program to which all members of the Committee may subscribe.

G. M. W.

MEMBERSHIP OF THE SOCIETY'S COMMITTEE ON THE EDUCATION OF GIFTED CHILDREN

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SECTION I.—GENERAL REPORTS AND SUMMARIES

CHAPTER I

HISTORICAL AND INTRODUCTORY

G. M. WHIPPLE
Professor of Experimental Education, School of Education,
University of Michigan

The idea of providing special educational facilities for children of superior intelligence is by no means a novel one. Students of education need only be reminded, for illustration, of the plan advocated by Plato, who based the educational scheme of his ideal Republic upon a thorough-going caste system—a system which he seems to have borrowed from the social constitution of the Hindoos. It will be remembered that Plato proposed three classes in his ideal state—laborers and artisans, warriors, and magistrates. There was to be no education for laborers and artisans, who needed only to learn a trade. The carefully prescribed education of the middle class was based upon music (including literary and esthetic training) and gymnastics, while the training of the highest class included all the sciences and detailed work in philosophy and metaphysics. It is true that Plato was an aristocrat, that his ideal was built upon a pronounced disdain for the common people: yet it is worthy of note that the barriers between the three castes were not insuperable; children of laborers and artisans who displayed uncommon ability were to be elevated to the magisterial group, while children of magistrates who displayed no competence were to be remanded to the artisan-laborer group. I have sometimes wondered whether some of the critics of the present-day movement for the individualization of instruction, especially the critics who seem to fear that the classification of school children on the basis of intelligence tests threatens to undermine "the foundations of democracy"—whether these critics may not have had these castes of Plato in mind and failed to understand that at any rate, those who now believe in providing adequate opportunity for gifted pupils are perfectly willing that the avenues into the realm of the aristocracy of brains shall be wide open to any who may demonstrate their fitness to attain it.

But it is not our intent here to trace through the history of education the thread of interest in the specially endowed child. Rather it is our intent to mention briefly some of the more conspicuous educational and psychological developments that have combined to produce the interest evinced in the problem at the present day. One of these developments is the study of the psychology of genius, of the factors contributing to the achievements of great men—and the allied studies of mental inheritance; another is the natural attention to the subnormal child, with its obvious implication of attention to the supernormal child; another is the perfecting of adequate instruments for measuring capacity for learning; another is the reaction against the mechanizing tendencies of the modern system of school grades.

STUDIES OF GENIUS

Lombroso's *Man of Genius* (1891), Galton's *English Men of Science* (1874), Galton's *Hereditary Genius* (1869), Constable's *Poverty and Hereditary Genius* (1905), Cattell's *A Statistical Study of American Men of Science* (1906-1910) are characteristic studies that have helped define the problem of the origin of superior achievement, especially to raise the issue as to the relative contribution of inherited constitution and educational training in the production of greatness.

Allied to these statistical studies are the detailed accounts which have been supplied from time to time of the training and of the exploits of *Wunderkinder* and of musical, mathematical, and other prodigies. Some of these are sufficiently interesting on their own account to be mentioned here.

PUBLISHED ACCOUNTS OF THE EDUCATION OF GIFTED INDIVIDUALS

In 1721, there was born in Lübeck, Germany, a boy named Christian Heineken, whose career from babyhood to his death in his fifth year is described at some length by his tutor.[1] When this baby was ten months old, his parents were struck by his precocity of observation and speech and promptly engaged a tutor for him. His education during babyhood included the learning by heart of biblical stories, verses on the creation, followed by the history of the world, arithmetical fundamentals, the names of the bones and muscles. When he was four years of age he could recite, according to his tutor, 1500 Latin proverbs and numerous anecdotes in French, could read printed and written German, answer any question in history, and so on. His fame spread throughout Europe; crowds came to marvel at his erudition, and he entertained the king of Denmark in a formal visit. Unfortunately, after his return to Germany the boy grew gradually weaker and died at four years, four months—truly, as his tutor declares, "a wonder for all time."

In a way, we may find in the narrative of this *Wunderkind* most of the problems that confront the members of the Society's Committee in this *Yearbook.* Thus, we may inquire, by assuming that this Heineken boy were before us now: (1) By what methods can the real degree of intellectual capacity of this youngster be determined? (2) How early in his life can we correctly diagnose his intrinsic capacity? (3) Is the child's ability all-round or restricted to some specific trait or group of traits, like memory and linguistic fluency? (4) How early ought systematic training to be begun? (5) Is there danger of 'forcing' his mental development at the expense of his physical or social development? (6) What ought to be the subject matter and what the methods of instruction in the early years of his life? (7) Is his exceptional accomplishment due primarily to his hereditary endowment, exceptionally skillful training, or to some happy combination of nature and nurture?

These and similar questions of great practical import may be kept in mind in reading other accounts of extraordinary children. They arise naturally, for instance, in reading Wiener's translation of "*The Education of Karl Witte,*" which brings out strikingly the plea for beginning systematic training with the very dawn of intelligence and supports the plea by demonstrating its effect in the case of the younger Witte, who was reading German, French, Italian, Latin, and Greek at the age of nine, matriculated shortly after at the University of Leipsic, was awarded the Ph.D. "with distinction" before he had reached his fourteenth birthday, made a Doctor of Laws two years later, and then appointed to the teaching staff of the University of Berlin![2] At 23 Witte had issued an essay "On Misunderstanding Dante" which is regarded as one of the most important literary contributions of the nineteenth century.

---

[1] C. von Schöneich. *Leben, Taten, u. Tod eines sehr klugen u. sehr artigen vierjähr. Kindes, Christian Heinrich Heineken aus Lübeck.* 2te Aufl., 1779. See for summary, *Zeits. f. Kinderforschung,* 15:1910, 225-9.

The same questions arise with regard to the remarkable careers of James Thomson and his brother William (Lord Kelvin) and of John Stuart Mill. The elder Thomson went to the greatest pains to give systematic personal instruction to his sons from their very infancy, teaching them, for instance, to read and spell almost as soon as they could speak, with the consequence that they were admitted as students at the University of Glasgow when twelve and ten years of age, respectively, where they easily not only held their place but also took a variety of prizes for unusual scholarly achievement. As for Mill, one may cite his own statement: "I have no remembrance of the time when I began to learn Greek. I have been told that it was when I was three years old--I learned no Latin until my eighth year. At that time I had read, under my father's tuition, a number of Greek prose authors, among whom I remember the whole of Herodotus and of Zenophon's *Cyropaedia and Memorials of Socrates.* Some of the lives of the philosophers by Diogenes Laetius, part of Lucian and *Isocrates ad Demonicum* and *Ad Nicoclem.*"[3]

In the United States there have been published in recent years several similar accounts of the training of gifted children that certainly challenge the attention of the thoughtful educator. Thus, for example, Dr. Boris Sidis was impelled to write his *Philistine and Genius* (1911) as a protest against the formalism and general inadequacy of the American public school because his son, William James Sidis, failed, in his opinion, to find suitable training there.

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[2] See for further details, H. A. Bruce, "The story of Karl Witte." *The Outlook,* 100: 1913, 211-218.

[3] John Stuart Mill, *Autobiography,* Vol. 1, p. 5.

The younger Sidis appears to represent a type of special development in certain fields of mathematics. According to various published accounts,[4] Sidis received his first training before the age of two. He learned to read and to spell by the aid of blocks before three, learned the typewriter well before four, entered school at six, where he was said by one writer to have ''finished the grades'' in half a year. However, we find that he studied at home for two years before entering the high school, where he remained but three months. During the next year or two he was tutored mainly in mathematics and was able in that time to master algebra, geometry, trigonometry, differential and integral calculus. He entered Harvard as a special student at eleven and devoted himself mainly to mathematics and science.

Other contributions of like sort in this country are A. A. Berle's *The School in the Home* (New York, 1913), and Mrs. Winifred Stoner's *Natural Education* (Childhood and Youth Series, Indianapolis). In the former, the Rev. Berle tells how his four children were taught. Despite the fact that the eldest entered Radcliffe at fifteen and the second child entered Harvard at thirteen and a half, and the other two are reported as making equally rapid progress, it is declared that ''they are not children of exceptional ability.'' Once more, then, we are confronted with the assertion that altered methods of instruction will very decidedly abridge the period required to fit our youths and maidens for entering our higher institutions of learning.

In the latter book, Mrs. Stoner describes the early training of her daughter, Winifred, who has also been the occasion of numerous magazine articles. Her presentation has added significance because Mrs. Stoner proposed at one time, if we recall correctly, to establish a series of training schools to teach the principles of the 'Stoner' method. Naturally, the implication is found here, as in the case of Witte, Berle, and Sidis, that it is skillful training rather than uncommon inheritance that produces such marvelous results as are chronicled. If this be true, it constitutes an obvious challenge to every teacher, every school administrator, and every parent. If, for instance, it is true, as Mrs. Stoner asserts, that any child can be taught to read English prose fluently at the age of three, there is something radically wrong with our present methods of teaching reading.

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[4] See, for instance, H. A. Bruce, ''Bending the twig.'' *Amer. Mag.* 60:1910, 690-5 and Katherine Dolbear, ''Precocious children.'' *Ped. Sem.*, 19: December, 1912, 461-491.

Supplementing these narratives the reader will find in Section II several interesting case histories of gifted children, compiled by Dr. Waddle.

The Study of Subnormals

Turning to other factors already mentioned as lying behind the present interest in the gifted child, there has been undoubtedly some influence exerted by the wide-spread interest in the problem of the subnormal child. I mean that a full recognition of the educational problem raised by the subnormal intelligence more or less naturally directs attention to the contrasting group lying at the other end of the scale of general intelligence. May it not be equally important, one naturally asks, to make special provision for the supernormal child? This is a point of attack that is well set forth in various comments by L. W. Stern, the Breslau educational psychologist.

The Perfecting of Intelligence Tests

Closely allied with this factor is another contributing agency, namely, the rise and perfecting of intelligence tests. As everyone knows, the first successful method of testing intelligence, that of Binet and Simon, was drafted specifically to meet a request of the school authorities of Paris for a reliable method of selecting pupils for special classes of the subnormal. The application of the Binet scale naturally thrust into prominence the fact that deviations from the average or normal performance were practically just as frequent and just as large in the plus as in the minus direction. So that, while the Binet scale is perhaps not ideally adapted in every respect for detecting and measuring degrees of superiority, practically it has served very well indeed for this purpose. Moreover, with the further extension of intelligence testing by the perfecting of group methods of examination, the method of tests assumed added administrative significance. It became possible, as the present writer showed conclusively in 1917,[5] by means of group tests of intelligence to select pupils of superior school capacity with a degree of precision far greater than that obtainable by means of school marks and teachers' estimates of intelligence. The same investigation demonstrated what others had already asserted, that pupils thus properly selected can do two years of regular school work in one year, without forcing and without detriment to their health.[6] Since this investigation, the establishment of special classes for the gifted has become much more common, and I believe it can be asserted without fear of contradiction that the use of systematic tests, both psychological and pedagogical in type, has everywhere been found a more reliable and satisfactory method of selection than the use of ordinary classroom marks or the opinions of teachers, however carefully these have been rendered.

The impression should not be conveyed from what has just been said that my own experimental class of gifted children was an utter novelty. On the contrary, I was led to undertake my investigations primarily in an effort to refine and systematize the study of the selection and training of gifted pupils that had already been in process in various school systems. I had been particularly impressed, for example, by the superior results attained in a special class of gifted pupils that I had visited at Louisville, Ky., as well as by the reports of the 'preparatory centers' established in such cities as Baltimore, Indianapolis, and Worcester.

THE REACTION AGAINST THE MECHANIZING TENDENCIES OF SCHOOL GRADES

The rise of these and other plans for the more effective training of gifted pupils, to return once more to the factors lying behind the present interest in the gifted child, is a natural outcome of the recognition of individual differences in their relation to the mechanizing tendency of the graded school system. The advent of compulsory education, the increase in our school population, and the rise of cities and large towns all tended toward more systematic grading, larger classes, standardized courses of study, and uniform methods of instruction. These rose naturally in the interests of administrative economy. But the problem of retardation and elimination stimulated study of age-grade distribution and it became increasingly evident to thoughtful school administrators that the economies of administration secured by the regular grade system were purchased at a high price when the needs and capacities of individual pupils, both dull and bright, were considered.

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[5] G. M. Whipple, *Classes for Gifted Children,* Bloomington, Illinois.

[6] In fact, one writer, Petzoldt, uses this attainment as a practical definition of supernormality; that is, a supernormal, or gifted, child is defined, for the purposes of the school, as a child who can compass two years of work in one year without undue forcing. Petzoldt further estimated that ten percent of the pupils in the German schools could qualify in this category. See J. Petzoldt, ''Sonderschulen für hervorragend Befähigte.'' *Neue Jahrbücher f. Päd.,* 14: 1904, 425-456; also a later article, ''Die Einwände gegen Sonderschulen f. hervorragend Befähigte.'' *Ibid.,* 28: 1911, 1-24.

The administrative problem became, then, how to retain the advantages of a comprehensive grading scheme with systematic promotion and at the same time to introduce a reasonable amount of flexibility. The various solutions offered for this problem have been reviewed in the publications of this SOCIETY,[7] yet brief review of some of them may be pardoned at this point.

Perhaps the first systematic plan for injecting flexibility into the stock grade system was that developed at St. Louis by Dr. W. T. Harris, who in his reports for 1868-9 and 1871 to 1873, as well as in 1872 before the National Education Association, presented the advantages of a system of school progress whereby pupils were promoted at short intervals—as short as five weeks in the lower grades—and gifted pupils in each section could, without much difficulty, be passed on to the section just above their own. It is interesting to note that Dr. Harris urged as one point in favor of this plan, that it held bright pupils to the work of which they were capable and kept them from acquiring habits of laziness.

In 1886, Mr. W. J. Shearer, then superintendent of schools at Elizabeth, N. J., elaborated a plan whereby three or four sections were formed within each of the eight grades in such a way that pupils of nearly the same attainments were grouped together. Each section was allowed to do as much work as it could, and individual pupils were also promoted to sections above them, without formal examination, as soon as they demonstrated fitness for that work. This ''Elizabeth Plan'' was later described in detail by its deviser.[8]

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[7] See T. S. Henry, "Classroom Problems in the Education of Gifted Children," *Nineteenth Yearbook, Part II,* Ch. I. For other accounts see (1) W. H. Holmes, *School Organization and the Individual Child,* Worcester, Mass., 1912. (2) R. A. F. McDonald, *Adjustment of School Organization to Various Population Groups.* Teachers Coll. Contr. to Educ., No. 75. (3) J. H. Van Sickle, L. Witmer, and L. P. Ayres, *Provision for Exceptional Children in Public Schools.* U. S. Bur. Educ. Bull. 1911, No. 14.

In 1891 there came into existence at Cambridge, Mass., a plan that has had much influence and been widely copied, with various modifications. This ''Double-Track Plan,'' or ''Cambridge Plan,'' embodied two distinct 'tracks' along which pupils could progress through Grades IV to IX. Pupils on the regular track took the six years' work in the regulation six years. Brighter pupils on the fast track did the same work in four years and were classed as in Grades A, B, C, or D. Provision was made for coaching dull pupils as well as bright pupils, and also for transfer from one track to another at certain common points which permitted making the six grades in five years. During the 17 years this plan was in operation, 10,203 pupils graduated from the grammar schools, 7 percent of whom completed the last six grades in four years, 28 percent in five years, 50 percent in six years, and 15 percent in seven or more years.

This ''Cambridge Plan'' in 1910 was modified by dividing the first seven years of the regular elementary course into three grades each and the eighth year into two grades, thus making twenty-three grades in all for the eight years. Parallel to this regular course there was another which covered the same ground in six years. This was divided into seventeen grades. In operation, it is evident that there are many opportunities of passing from one course to the other, so that the rate of progress may be varied to meet almost any need.

The earlier ''Cambridge Plan'' was adopted with modifications by various school systems. Among these modified plans are several that have found a place in the literature of school administration under the names of the communities in which they arose. Thus the ''LeMars Plan'' and the ''Odebolt Plan'' and the ''Portland, Oregon, Plan'' may be regarded as modifications or extensions of the original ''Cambridge Plan.''[9]

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[8] W. J. Shearer, *The Grading of Schools.* 1898.

In 1894, before the extension and developments of the ''Cambridge Plan'' just cited, there was introduced into the schools of Woburn, Massachusetts, a unique system of promotion to which the name ''Double Tillage Plan'' has been applied. According to this plan, which was in operation from 1894 to 1903, the work of each school grade was covered in the first half year and then worked over again in greater detail during the second half year. Pupils of superior ability who were able to get an adequate return from the efforts during the first half year could be promoted to the grade above at the middle of the year and thus accomplish two years' work in one.[10] From the reports of this work it appears that more than a thousand pupils received mid-year promotions during the nine years mentioned and that nearly a thousand also obtained a second promotion at the end of the year. We have at our disposal no reports from cities in which this Woburn plan was undertaken. At Woburn it was abandoned finally, save for the first two grades, primarily on account of the gradual increase in the subject matter of the elementary-school curriculum, which made it more and more difficult for pupils to gain the extra promotion by covering the year's work in half a year.

In 1895, Mr. J. H. Van Sickle, who has devoted much attention to special provision for gifted children, was superintendent of the North Side schools of Denver, Colorado. At that time Superintendent Van Sickle developed a plan which we would now characterize as an ''Enrichment Plan.'' The saving of time was given relatively little emphasis, but the brighter children were given opportunity and encouraged to do both more extended and more intensive work than the rest of the class. This extra work was not to be done at home, but in the main during free periods when the other children were reciting.

About 1900 there appears to have been a sudden increase in the interest felt on the part of school administrators in plans for flexible promotion. The appearance of Mr. Shearer's book in 1898 and the discussion of grading and promotion at the National Education Association meeting in 1898 were doubtless factors contributory to this increase of interest.

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[9] For details of these modified plans see Holmes, W. H. *Op. cit.*, pp. 39-43.

[10] Annual Reports, School Committee, Woburn, Mass., especially 1903-4.

About this time there appeared accounts of several interesting plans. Among these may be mentioned the "Santa Barbara Concentric Plan," according to which each grade was divided into three sections, 'A,' 'B,' and 'C.' All sections were required to master the minimal essentials of the curriculum, but the 'B' pupils were to do more extensive work than the 'C' pupils and the 'A' pupils more extensive work than the 'B' pupils. When the 'A' pupils of any grade were ready for the work of the next grade, they were promoted to the 'C' section of that grade. Opportunity was also provided for transfers from section to section within any grade at any time. Despite this scheme for individual promotion from section to section, the general effect of the "Santa Barbara Plan" seems to have been to emphasize the enrichment of the course of study of the gifted children rather than to accelerate their school career. It will be seen that some elements of this plan appear later in the "Detroit Plan."

About this period there also appeared in Chicago, New York, and other large cities a plan referred to sometimes as the "Large-School-Plan" and, sometimes, as the "Group System." As the name implies, the plan is most feasible in city schools where the number of pupils in a given grade is sufficient to divide them into three or more sections. It is assumed that the division is made on the basis of the ability of the pupils.

This "Large-School-Plan" has been elaborated in two somewhat different directions—in one there has appeared the so-called "Constant Group System," according to which the assignment of pupils to a given group is made for a definite school period and promotions from group to group, or grade to grade, are made only at regular and natural intervals. Usually this plan is so operated that at these promotion periods pupils may be promoted in certain subjects in which they are well prepared, but not in other subjects in which they are less well prepared. The general aim of this system is to give to the bright pupil an opportunity to advance rapidly in those subjects in which he is competent.

In another direction there has appeared the so-called ''Shifting Group System,'' according to which there may be as many groups in as many subjects as the teacher desires, and in which promotions may take place at any time. The actual aim in this system, according to Holmes, has usually been to bring slow pupils up to the grade standard and to encourage gifted pupils to do thorough and careful work.

In 1901 there appeared the interesting contribution of Superintendent P. W. Search,[11] which embodies an argument in favor of an extreme type of individualization of instruction. Mr. Search says that: ''Experience shows conclusively that even in a well graded class there are some pupils who can do three times as much work as others,'' and that if class instruction be done away with and the individual be allowed to progress at his natural pace, there will be secured for gifted children ''full, free opportunity to live up to the best that is in them.'' The ''Pueblo Plan,'' as Mr. Search's plan is usually termed, appears to have broken down partly on account of its expensiveness, but it is also said that in actual practice the emphasis seems to have been laid upon the instruction and coaching of the backward pupils rather than upon the facilitation of the work of the gifted.

This notion of individual instruction and individual progress thus set forth by Search in 1901 came again into prominence in 1913 when Frederic Burk, the Principal of the San Francisco Normal School, inaugurated a similar plan in the elementary school connected with that institution. Writing some five years later of the results, Burk declares[12] that competent pupils demonstrate their fitness to be placed upon what he terms a 'self-reliant' program, whereby they use their own judgment in deciding upon what amounts of time they shall give to the various subjects and proceed very largely on their own initiative. He also declares that superior pupils can by this method finish the regular eight-year program of study in five years.

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[11] Search, P. W., *An Ideal School.* 1901.

[12] Burk, Frederic. ''Individual instruction vs. the lock-step system.'' *The American City,* 18: 1918, 327-330.

More recently the principles advocated by Burk in the organization of his normal school have been further developed and extended, with systematic supplementary work of a socializing nature, in the "Winnetka Plan," developed by Superintendent C. W. Washburne of that city. How that system operates to facilitate the progress of unusually competent pupils is described elsewhere in this volume.

In 1902 there was inaugurated at Baltimore a "Preparatory Center Plan" whereby pupils who had completed the sixth grade with distinct success were brought together in a common class and given departmental instruction so arranged as to cover in two years not only the regular work of the seventh and eighth grades but also a considerable fraction of the first year work of the high school. In 1907 Superintendent Van Sickle presented the merits of this plan at the meeting of the National Council of the National Education Association and the same topic was continued in the following year, when Mr. C. H. Kendall, then superintendent of schools at Indianapolis, described the operation of two similar centers that had been established in that school system. A few months later, the Committee on Provision for Exceptional Children in the Public Schools presented its preliminary report to the Council and in 1911 a still more elaborate discussion of this matter appeared in the Bulletin of the Bureau of Education prepared by Van Sickle, Witmer, and Ayres.[13]

Writing in 1910, Van Sickle[14] reported that, despite obstacles raised by some of the parents and pupils as well as teachers, there was statistical evidence that the selected pupils had distinctly profited by their sojourn in the preparatory centers, whether by gaining time or gaining credits without gaining time. Similar provisions for gifted pupils in the upper grammar grades have been in operation, according to Holmes, in the Boston Latin School and in schools at Providence; Worcester, Massachusetts; Portsmouth, New

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[13] Van Sickle, J. H., Witmer, L., and Ayres, L. P. *Provision for Exceptional Children in Public Schools.* United States Bureau of Education Bulletin, 1911, No. 14.

[14] "Gifted children in the public schools." *Elem. Sch. Teacher,* April, 1910, 357-366.

Hampshire; Richmond, LaPorte, Crawfordsville, Goshen, Madison, and Indianapolis, Indiana; Joliet and Aurora, Illinois; East Saginaw, Iron Mountain, Kalamazoo, and Grand Rapids, Michigan; York and Lincoln, Nebraska; Lead, South Dakota; McAlister, Oklahoma; Harrisburg, Pennsylvania;[15] Lake George and Warrensburg, New York; and New Orleans, Louisiana.

Comments on the operation of similar special classes at Battle Creek, Michigan, supplied the writer by Superintendent W. G. Coburn, are as follows:

> ''In the fall of 1915 the city of Battle Creek decided to bring together in one group about thirty of the best pupils who were completing the sixth grade. The course was so arranged that the group could finish the seventh, eighth, and ninth grades in two years, thereby gaining a year. For three or four years we accepted the teacher's recommendation only, which was not entirely satisfactory; then we chose a class recommended by our department of tests and measurements and ignored the teacher's recommendations. This plan failed because so many elements entered into the success of the pupil which could not be measured by the mental and educational tests. We are now taking into account both teachers' opinions and the recommendation of the department of tests and measurements. The plan works admirably and is the most satisfactory arrangement we have yet found.
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> ''The pupils, under this plan, are given work in Latin, mathematics, English, history, and manual training or domestic science, and in the next two years are prepared for the tenth grade of the high school. In connection with the study of Latin, the pupil will get his English grammar; the arithmetic and algebra will be included under mathematics; the history will include American history, civics, and ancient history; and the English will include the composition and reading usually done in the seventh, eighth, and ninth grades, but considerably shortened. This is a modified course and the 7 B pupils gain a year by entering the class.''

The ''Newton Plan'' is associated with the work of Dr. F. E. Spaulding while superintendent of schools at Newton, Massachusetts, 1904-14. One feature of this plan is the employment of ''unassigned teachers'' who have no regular class instruction but who are placed in charge of a special room to which come pupils in need of special assistance. A second feature of the ''Newton Plan'' is the abolishment of the grade lines as barriers to the advancement of pupils; that is, grades are used to designate a certain kind of work at a certain place in the course of study. Any pupil or any group of pupils or any class of pupils that completes the work of one of these "grades" may immediately undertake the work of the next grade, regardless of the time in the school year. Here, as in the case of the "Pueblo Plan," the efforts of the special instruction thus provided seem to have been directed primarily toward helping retarded and dull pupils who were trying to keep up to grade rather than toward directing gifted pupils who were endeavoring to accelerate their progress through the grades.

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[15] For an account of this work at Harrisburg and also of the earlier use of fast sections, especially in the second and sixth grades, in that city, see Downes, F. E. ''Seven years' work with unusually gifted pupils.'' *Psych. Clinic,* 6: 1912, 13-17.

During the past ten years a variety of plans for handling gifted pupils have been instituted. Special promotion (grade skipping) appears to have become a fairly common feature. On this account the study of its effects published later in this *Yearbook* will be read with interest by many superintendents.

The formation of special segregated groups, on a quasi-experimental basis, has also been reported from several cities. On the basis of doubtless quite incomplete reports we may cite as illustrative of the method of sectioning within classes—in the elementary schools: Everett, Massachusetts; Kansas City, Missouri; Cincinnati, Ohio; Kalamazoo and Detroit, Michigan; and in the high school: Salt Lake City, Omaha, New York, Philadelphia, Providence, Spokane, Middletown (Connecticut), Highland Park (Michigan), Cicero (Illinois), and Marshfield and West Allis (Wisconsin).

Among cities that are known to have provided definitely segregated classes for gifted pupils are Berkeley, Los Angeles, and San Diego, California; Meriden, Connecticut; Oak Park, Illinois; Indianapolis, Indiana; Kansas City, Kansas; Louisville, Kentucky; Boston and Worcester, Massachusetts; Battle Creek, Detroit, Grand Rapids, and Jackson, Michigan; St. Paul, Minnesota; St. Louis, Missouri; Newark, New Jersey; New York City and Rochester, New York; and Cleveland and Cincinnati, Ohio.

In Section II of this volume will be found special studies from some of these cities, as, for example, Cicero, Detroit, and Louisville. The work in others is referred to in several of the chapters immediately following this one. A brief statement of the method of handling gifted children in two Michigan cities with which the writer is familiar may be made, however, at this point, since these cities illustrate certain characteristic developments of the past few years.

In the report by Miss Engel (Section II) reference is made to the ''Special Advanced Classes'' that were in operation in Detroit a few years ago in the higher grades. For various reasons these classes were discontinued after a period of successful operation. One reason for their discontinuance was the adoption in Detroit of a fundamentally new policy of administering the work of the first six grades which included, among other things, express provision for superior children from the first grade up. The core of this new policy lies in the conviction that it is particularly important so to advance the school progress of all pupils (saving the very inferior) that they may enter the large intermediate (junior high) schools at about the beginning of the adolescent period and thus have full opportunity to utilize the differentiated and practical course of study of these schools before the end of the period of compulsory school education. To all intents and purposes, then, ''grades'' mean in Detroit the number of years that pupils have attended the schools, since, at least in theory, every pupil advances one grade a year. It needs no expert to understand that the logical outcome of this policy is the necessity for dividing the pupils early in their careers into sections of different capacities and of so modifying the course of study and the methods of instruction as to meet these different capacities for school work. Consequently, in September a group intelligence test[16] is given to every pupil who enters the first grade in Detroit. From the scores secured the pupils are classified into seven degrees of general intelligence, ranging from a rating of A through B, C plus, C, C minus, and D to E. The 'A' and 'B' pupils are then grouped together and designated as the 'X' section. The 'D' and 'E' pupils are similarly grouped and designated as the 'Z' section. The remaining pupils, those with average ability, form the 'Y' section. Roughly, the X section contains the best 20 percent, the Z section the poorest 20 percent, and the Y section the middle 60 percent of the first-grade entrants. The pupils are taught, then, in these three sections X, Y, and Z. The type of work, its pace, and the methods of presentation are supposed to be adapted to the needs of superior, average, and inferior pupils, respectively. Transfers of pupils, whose classification by the intelligence test turns out to have been unsatisfactory, are made upon re-examination and joint recommendation of the staff of the Psychological Clinic and the teachers and principals concerned.

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[16] For further details see (1) C. S. Berry. ''The classification by tests of intelligence of ten thousand first-grade pupils.'' *Jour. of Educ. Research*, 6: Oct., 1922, 185-203; (2) W. K. Layton. ''The group intelligence testing program of the Detroit public schools.'' *Twenty-first Yearbook* of this SOCIETY. 1922, Part II, Ch. II.

One of the numerous obstacles that have been encountered in the administration of this plan in Detroit consists in the tendency of the grade principals to concentrate their attention upon the Z section. In many of the schools the best teachers were assigned to the dullest pupils, apparently on the theory that skillful teaching would accomplish the impossible for them and the correlative theory that the bright pupils could get along anyway and hence did not need particularly skillful teaching. The fallacy of this theory has been recognized, and attempts are being made to direct more attention to the needs and possibilities of the X sections.

Another of the obstacles that has been encountered, not only in Detroit but in other cities where serious attempts are being made to provide for gifted children, consists in the decided lack of information or agreement as to what alterations should be made in the course of study and in the methods of instruction of the X group. This is a problem of great interest and importance. It unrolls itself into numerous part problems, each of them difficult of immediate solution. Thus, we must seek answers to such questions as: "How much faster can an X child work than a Y child?" "Should he be taught to read by a different method?" "Should he have less drill or more drill in the fundamentals of arithmetic?" "Or should he have the same amount of drill in a shorter time?" "Should he be allowed or even encouraged to enter the high school at a younger age?" "If he gains time by his superior ability, what shall be done with the time thus saved?" "Should his school day be shorter?" "Should he do more or less outside work and home study?" "Should his attainments in the various school skills be the same as average children or should more be expected of him?" "Should he, for example, be expected to gain the 4th-grade standard speed and accuracy in short division or should he at that grade be expected to excel the 4th-grade standard?" "Should he be considered from the outset as presumptive college material and his course of study shaped primarily for college entrance?" "Should he, as compared with the Y pupil, be given the same or more or less of the manual art subjects?" "Would the answers to any or all of these questions be different if the X sections were more rigidly selected—if, for instance, they were limited to the top 10 percent instead of the top 20 percent?" In the chapters that follow, especially that by Dr. Rugg, will be found further discussion of the problems here raised.

Turning to another Michigan city, the work at Jackson may be cited as an illustration of two different varieties of special classes for the gifted that have appeared within the past decade—I refer to the so-called "speed" classes and "enrichment" classes. Of these two types, the former were the first to be established. Thus, in the fall of 1921 there were in operation three speed classes, enrolling 90 pupils.[17] The grades represented were from the lower third to the upper sixth. All the pupils who were admitted had been found upon examination to rank in the top 15 percent of their age group in a group intelligence test. Substantially, they formed a group with mental ages equal to the grade to be attempted and with I.Q.'s of 115 or better; or, in other words, they were about 1.5 years or more mentally accelerated. The general plan of operation was to keep pupils in these rooms for one semester, during which they did the work of two regular semesters, and then to return them to the regular classes; occasionally unusually capable pupils remained two semesters and did the work of two regular years in one. In these speed rooms a certain amount of accessory work characteristic of the grades in question was reduced in quantity or temporarily eliminated; thus, there was less time devoted to music and drawing and the manual arts than in the regular grades.

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[17] For further details see Helen Davis. "The use of intelligence tests in the classification of pupils in the public schools of Jackson, Michigan." *Twenty-first Yearbook* of this SOCIETY, 1922, Part II, Ch. III.

The general results of these speed rooms have been satisfactory. They have demonstrated that properly selected pupils can accomplish two years of work in one year without detriment to their health. The method is undoubtedly superior to the rougher device of grade skipping, though that can be shown to be successful, despite its roughness.[18] On the other hand, even in this method of bridging the period of acceleration there is obviously a jerky 'feel.' The hiatus and the jump of the grade skipping is removed, but the gifted pupil speeds for five months out of his elementary career only, and for the rest of the time he must keep the slower pace of the average pupil. The administrative advantage of the speed room is that it makes it possible in a smaller school system to bring together under one teacher a sufficient number of pupils of superior ability to form a good-sized working group. The atmosphere of these rooms is remarkable. Problems of discipline disappear; records of attendance and punctuality are high; the morale is unusually fine. There is obvious opportunity for a competent teacher to do much for these pupils in the direction of training them in methods of intellectual work, in habits of study, in attitude toward the school and toward life that shall greatly increase their power to work and go far to ensure that they shall reap the fruits of their potential capacities. It might be well to say at this point that one of the primary arguments for the segregation of the gifted lies in the development of proper attitudes. I mean attitudes like industry and hard work, co-operativeness, responsibility, and initiative. If these wholesome mental attitudes are secured, segregation is worth while, regardless of actual gain in time or in amount of information secured.

The establishment of enrichment classes for the gifted in Jackson represents an effort to provide a more continuous training for pupils of superior endowment. It was felt to be undesirable to 'speed' pupils more than one semester (or at most two semesters) and yet it was desirable to keep these pupils in homogeneous groups. Accordingly, three classes of a new type were organized in which gifted pupils of the fifth and sixth grades are given an enriched course of study. At the present, then, there are in this city of 50,000 population four special classes for the gifted; one, the speed class, is now confined to Grades III and IV, whereas the three enrichment classes (known locally as "Opportunity Classes") are now confined to the work of Grades V and VI, thus illustrating a point brought out elsewhere, that acceleration seems more obvious in the earlier grades and enrichment in the higher grades.

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[18] See the report by Martin in Section II.

The general plan of operation of these enrichment classes will be understood from what has been said. The pupils have been selected by intelligence tests and usually with confirmation from teachers' estimates. Many of them have already attended the speed school. Those who enter the classes in the lower fifth grade may remain in them two years, that is, until they leave to enter the intermediate school.[19] The work includes the regular tasks of the fifth and sixth grades, but this is supplemented by various types of enrichment. The nature of this enrichment work is mentioned in the chapter by Dr. Rugg, and may be omitted here, save to say that, in my opinion, much value would result if teachers of similar classes in various cities could be induced to keep careful journals, or logs, of their daily work; we might thus in a few years arrive at a better understanding of the possibilities of this type of provision for gifted pupils. We should know where and how to save time and energy in their instruction and how best to utilize this time and energy once it had been saved.

THE WORK OF THE COMMITTEE

What has been presented indicates in a sketchy way the situation in this country at the present time. This Society devoted a portion of its *Nineteenth Yearbook* and of its Cleveland, 1920, meeting to a discussion of the situation as it appeared at that date.

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[19] The result of this plan of organization of speed and enrichment classes, together with the possibility of special promotion in the first two grades and the provision for gaining additional points by electives in the junior and senior high schools, is to provide an opportunity for every gifted child in Jackson to capitalize his capacity at every stage of his public school career.

It was felt that sufficient advance had been made and sufficient interest created to warrant devoting another *Yearbook* and another meeting to the same topic. The Committee that has prepared the 1924 *Yearbook* hoped at first to report in 1923, but the task proved too formidable. The Committee accordingly submitted at that time the following report of progress:

REPORT OF PROGRESS OF THE COMMITTEE OF THE NATIONAL SOCIETY FOR THE STUDY OF EDUCATION ON THE EDUCATION OF GIFTED CHILDREN

Since the Society's meeting in February, 1922, the chairman has sent out over two hundred letters to all those state superintendents of public instruction, superintendents of schools, principals of schools, and directors of departments of research who were thought to be in touch with public school systems in which special provision is made for gifted pupils.

At a meeting of the Committee held at Chicago in November, 1922, the replies to these letters were presented in condensed form and the possibilities of basing a *Yearbook* upon the material available were discussed. It was agreed that a *Yearbook* that would do justice to the situation could not be prepared before February, 1924. It was further agreed that the tentative outline for this *Yearbook* should be laid before the members of the Society in printed form in February, 1923, so that every member should be stimulated to co-operate with the Committee by reporting to it work now in progress in any schools that should be communicated to the Committee, or described in more or less detail in the *Yearbook*.

The following is the tentative outline:

PART I

I. Historical Statement: the development of the idea of special treatment for the gifted in public schools

II. Methods of Selection
  1. Intelligence Tests
    (a) Group vs. Individual Tests
    (b) Definition of the limits of giftedness
    (c) The specially gifted child vs. those with high I.Q.'s only
  2. Achievement Tests
    (a) The high I.Q. and poor scholarship
  3. Physiological age and mental precocity
  4. Teachers' estimates

III. Problems of Organization
  1. Special instruction with no rearrangement of pupils, *e.g.*, unassigned teacher, elastic assignment, etc.

2. Individual acceleration (grade skipping) with or without special instruction
    - (a) Advantages
    - (b) Disadvantages
    - (c) Grades in which it is most feasible
3. Segregation or sectioning
    - (a) Size of classes or sections
    - (b) Number of sections
    - (c) Grades in which it is most feasible
4. Methods of marking gifted pupils; plans for additional credit for high-grade work, etc.
5. Housing and equipment
6. Teachers
    - (a) Qualifications
    - (b) Selection
    - (c) Desirability of continuing with class
7. Cost of special instruction
8. Type of organization as related to size and location of schools
9. Typical objections and how to meet them
10. Degree of publicity desirable
11. Nomenclature

IV. Problems of Curriculum and Instruction

1. Acceleration vs. enrichment
2. Acceleration
    - (a) Advantages
    - (b) Disadvantages
    - (c) Grades in which it is most feasible
    - (d) Subject matter that is omitted
3. Enrichment (definition of minimal essentials)
    - (a) Anticipatory enrichment, or acceleration by subjects (preparatory centers)
    - (b) Intensive enrichment, or extended work in the same subjects
    - (c) Extra-curricular enrichment
    - (d) Manual-arts enrichment
4. Individual instruction
5. The elastic assignment

V. Personal and Social Aspects

1. Home conditions
2. Social adaptation and the development of leadership
3. Character traits and their development (laziness, initiative, interests, etc.)
4. The proper attitude of pupils in a class for the gifted: avoidance of snobbishness, development of initiative, etc.

PART II

I. Case studies of gifted children
II. Description of methods and plans used in various systems
III. Special intensive studies of different aspects of the fields
Reports of experiments
IV. Bibliography

It is proposed to devote most space to Section IV, Part II (Problems of Curriculum and Instruction) and especially to present programs of study that will show in detail what changes are made in content and method in actual classroom work. The Committee has encountered an insistent demand for help in this direction and on this account welcomes information concerning details and alterations in courses of study that have been found desirable in teaching gifted children. The Committee is equally anxious to hear of instances in which the acceleration or the segregation of gifted children has been felt to be undesirable or in which special treatment for the gifted has been tried but discontinued. It would like also to include some account of what first-class private schools are doing for gifted children.

Professor Freeman will be glad to correspond with those who are in a position to undertake experimental studies in this field or who are willing to report the results of experiments they have already made. Among the investigations suggested are: Experimental or statistical studies of the effect on pupils' work of acceleration or of homogeneous grouping, *e.g.*, a study of grade skipping, of segregation with and without modification of the curriculum; 'follow-up' studies of gifted pupils; measurement of the relative progress of segregated and unsegregated classes; studies of the effect of segregation on the achievement quotient of bright pupils; studies of the cost of segregation, etc.

You are urged to communicate promptly to the Chairman or to the Secretary of the Committee any information you may have that should be of value or any criticisms or suggestions you may have of the tentative outline. We want to make this *Yearbook* a truly co-operative affair.

Bird T. Baldwin, Iowa Child Welfare Research Station, Iowa City, Iowa
Helen Davis, Board of Education, Jackson, Michigan, *Secretary*
Lillie R. Ernst, Board of Education, St. Louis, Missouri
Frank N. Freeman, University of Chicago, Chicago, Illinois
Ernest Horn, State University of Iowa, Iowa City, Iowa
Harold O. Rugg, Lincoln School of Teachers College, New York City
Leon O. Smith, Assistant Superintendent of Schools, Omaha, Nebraska
Lewis M. Terman, Leland Stanford University, California
Guy M. Whipple, University of Michigan, Ann Arbor, Michigan, *Chairman*

The present *Yearbook* will indicate what the Committee has been able to accomplish of the program thus laid out. Particular difficulty has been encountered in gathering information concerning adaptations of the curriculum and of methods of instruction for gifted pupils. This difficulty interfered especially with the plans of Dr. Horn (to whom the appointment of the original Committee and much of the planning of its work should be credited) for contributing an extended discussion of this topic in the field of elementary education, and with those of Dr. Rugg for contributing a similar discussion in the field of secondary education. These two chapters have had, perforce, to be limited in the main to an expression of the opinions and practices of a few individuals.

Similarly, the reader will note much individuality in all the reports. The several members of the Committee are not in complete agreement in their evaluation of the various methods outlined in the *Yearbook* for the selection of gifted pupils or for the administration of their training. After extended discussions of many of these matters in its meetings, the Committee agreed that the desideratum on which all its members *are* agreed—better provision for gifted pupils in the public schools—would best be furthered if each member were to set forth the situation as he saw it. Mark Twain, I believe, once remarked: ''Differences of opinion must be good things, because they made horse-races possible.'' If this *Yearbook* operates, similarily, to instigate the proponents of different methods of handling gifted children to prove their case, it will, we are sure, justify the labors of the Committee.

The personnel of the Committee has undergone certain changes since the Report of Progress already quoted. Miss Ernst resigned on account of changes in the scope of her professional labors at St. Louis. Dr. Waddle and Dr. Henry have been added and have contributed materially to the results of our work, as the *Yearbook* itself will attest.

CHAPTER II

METHODS OF SELECTING SUPERIOR OR GIFTED CHILDREN[1]

Bird T. Baldwin
Director of the Iowa Child Welfare Research Station, Iowa City, Iowa

Introduction

When the writer began teaching school in Pennsylvania, at the age of seventeen, he was told by the county superintendent that the criterion for promotion was to be the pupil's accomplishment in Brooks' *Arithmetics.* This was supposed to be a step in advance over the grading by Appleton's series of six readers, which had been in vogue for many years in these rural schools. In 1910, Ayres' *Laggards in Our Schools* made chronological age the criterion for school promotion. It has been a short time since the writer observed a group of first-grade children—several of whom had high I. Q.'s—fail at the end of a school term in a year's promotion because they were unable to make a posited score in Monroe's Silent Reading Test. In reply to a recent inquiry in regard to methods of selecting gifted children for school acceleration, a state superintendent of public instruction replied: ''All children in our state are promoted on intelligence tests.'' This immediately evokes the question: ''What kinds of tests and who gives them?''

Can we afford to rely, at the present advanced stage and development of our science, on any one of the above criteria, or on any single test in the hands of an average teacher, as a basis for diagnosing and evaluating a cross section in the entire school life of a child? It must be remembered that the tests, scales, or judgments are but single shafts sunk into the very complex nature of a developing child, and that these devices used, perhaps only annually, may be very misleading and misrepresentative of the rich soil or deposits which they are supposed to essay.

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[1] In this chapter ''gifted'' and ''superior'' are considered almost synonymous terms.

Educators are just beginning to appreciate the fact that the selection of gifted and superior children for school advancement is a very intricate scientific problem. It is the purpose of this paper to outline, from the practical educational point of view, methods of analyzing the problem and to formulate scientific principles on which a practical and rational system of selecting superior children for school instruction and school promotion may be based. The point of view of the writer is that of an educational psychologist and experimental scientist whose predominant interest is in the child.

I. CONTEMPORARY METHODS OF SELECTING SUPERIOR OR GIFTED CHILDREN

It is not possible to get a complete survey of the present methods of selecting gifted children for special classes or for school acceleration by other methods. The results briefly outlined in this section are from 68 school systems in various parts of the United States and are gleaned from special letters written to Dr. Whipple, from printed reports, and from magazine articles. No doubt other school systems are making similar selections. It is probable that criteria other than those mentioned are being used. It is also true that in many of the reports for a particular school system, the methods outlined refer to one or two particular grades or to one or two particular schools within the system, and not to the system as a whole.

The methods in vogue may be summarized in tabulated form if allowances are made for the existence of one or more methods in a particular school system.

A. Methods of Selection

1. Intelligence examinations, 56 cases
    a. Group tests, 22
    b. Individual tests, 7
    c. Individual and group, 9
    d. Individual or group (not stated) 18
2. Teacher's recommendation, 28
3. Scholastic standing, 25

   a. Standard tests, 13
   b. School marks, 11
   c. Special examination, 1
4. "Probation," 4
5. Health, 5
6. Chronological age, 3
7. School history and pedagogical age, 2
8. Social development, 1
9. Effort and "concentration," 3
10. Parents' permission or advice, 1
11. "Demonstrated ability," 6

B. Number of Schools Using One or More Methods

1. One method only, 31
2. Two methods, 17
3. Three methods, 13
4. Four methods, 4
5. Five methods, 1
6. Six methods, 1
7. Seven methods, 1

Criteria Included in the Use of Two Methods

Scholastic standing and psychological tests, 4
Teachers' recommendation and psychological tests, 12
Teachers' recommendation and educational tests, 1

Criteria Included in the Use of Three Methods

Scholastic standing, psychological tests, and teachers' recommendation, 6
Psychological test, probation, and teachers' recommendation, 2
Psychological test, scholastic standing, and probation, 1
Psychological test, teachers' recommendation, and demonstrated ability, 2
Standard educational tests and psychological tests in respect to chronological age, 1
Demonstrated ability, chronological age, and psychological tests, 1

Criteria Included in the Use of Four Methods

Recommendation, probation, scholastic standing, and psychological tests, 1
Recommendation, scholastic standing, psychological tests, and health, 1
School marks, standard educational tests, psychological tests, and health, 1

School marks, psychological tests, health, and effort, 1

Three other systems list additional combinations of the methods outlined above.

As a result of a questionary addressed in 1920 to the cities of 25,000 population or more, Freeman[2] found in 68 replies from elementary schools where provisions were said to be made for gifted children, 35 cases in which the selection was determined by ''teachers' judgments,'' and 32 in which ''tests and school marks'' were used, the types of tests not being specified. Hughes' questionary to 221 high schools showed that 24 percent endeavored to classify ''by ability,'' 14 percent made ''partial provisions,'' and less than 7 percent used mental tests for selection. In 1922, Oman made inquiry of 50 junior and senior high schools in 23 states and found that 72 percent were using ''intelligence ratings'' to select the pupils for ''speeding up.''

These data show that (1) *the schools of the country at large have hardly made a beginning in their provisions for gifted children;* (2) *there is little or no uniformity as to methods of selecting gifted children for school work;* (3) *there is no concensus of opinion as to the age or grade in which differentiation of work should take place;* (4) *no provision is made for sex differences; and* (5) *in fact, very few school systems do make provision for gifted children in every school and grade.*

A classification of the disposition of children within the school system, after their selection, shows that there has been little conscious recognition of the differences which should govern the purposes of the selection. In a majority of cases cited, the children are selected for an advance in school grade, *i e.,* acceleration up the scale, usually by skipping a grade or by rapid advancement through a grade. In some cases the selection is for segregation into special classes or special schools; for transfer within the grade to an advanced division; for ''supplementary and excursion'' work; for an ''enriched course of study''; for more intense work in the same subject; for ''more drill''; and in one instance for ''opportunity farm work.'' The methods of selecting qualified teachers for gifted children, if such methods exist, have been overlooked or ignored in the reports.

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[2] For specific references to the studies quoted see the bibliography in Section III of the *Yearbook.*

While these letters and reports indicate, from an administrative point of view, an almost chaotic condition in regard to adequate or uniform methods of selecting gifted children and a wide divergence as to methods of training gifted children, they do show that *an increasing number of technically trained educators throughout the country are aware of the great significance of the problem and are making valuable contributions toward dealing with the problem in an effective manner, as the subsequent chapters and the bibliography show.*

II. Principles Governing Selection

The fundamental principles governing the selection of superior or gifted children are determined by the purposes for which the selection is made, as just outlined above. These aims or purposes are dependent on the type of child (treated later) and on the type of organization in the school system (cf. Chs. III and IV of this *Yearbook*), on the curriculum and methods of instruction in the schools (Chs. V and VI of this *Yearbook*), and on the personal and social environment of the child, the home, and the school (Chapter VII of this *Yearbook*). Since it is not possible for the writer to anticipate these later chapters, the methods outlined in this chapter are his contribution, which differs essentially from the current opinions of writers on gifted children.

If gifted, talented, or superior children are to be recognized in school training, the conception of education must be broadened. There is no doubt that schools tend to become inbred. They have too often valued highest the things which they require to be taught; they have arbitrarily rated abstract thinking above concrete thinking; they have praised the ability to use words to the exclusion of the ability to manipulate things or people; they have emphasized isolation more than co-operation; they have been satisfied with the acquisition of knowledge of tools rather than the actual use of the tools; and they have provided opportunities to acquire knowledge and offered few occasions to 'make knowledge' in the pragmatic sense.

The modern school must be centered around children and not around curricula, plans of administration, or school buildings, when these lead to the neglect of children's development. The child is the center of reference for all school work and the gifted child should receive special consideration.

A. The Limitations of Contemporary Methods of Selecting Gifted Children

1. *Mental Tests*

That mental tests should form an integral part of a practical method of selecting superior children should be emphasized.[3] On the other hand, mental tests are very frequently misused at present. There is a strong wave of enthusiasm for mental tests sweeping the country, which is resulting in the promotion of pupils—especially superior children—on I. Q.'s alone. This assumes that an individual measuring scale or a group test evaluates the psychological development of the child, while in reality practically all of these scales or tests represent a rather narrow cross section of the child's mental make-up. Few of them even attempt to measure intelligence alone, if we accept Stern's rather broad definition of intelligence—*"General intelligence is the ability of the organism to adjust itself adequately to new situations."*

The intelligence tests are relatively gross, blanket estimates or averages of specific groups of mental abilities. They take into consideration few distinctions of the relative values of the special traits to the specific individual under examination. Little or no recognition is taken of the child's emotional development and emotional drive, of the will to succeed in school work, the initiative to create, the ability to lead, or the willingness to co-operate with others. No recognition is made of the relative value of brightness and cleverness, and of accuracy and persistence of the slow, intensive type of thinking, frequently necessary for good work. In the tests, linguistic ability may count for more than creative thought. The results of a single scale may not give a true picture of the increment of mental growth. Allowance is not made for the influence of racial and environmental backgrounds, physiological age,[4] or for sex differences. All of the tests, as far as the writer can learn, fail to differentiate the stages of mental maturity and brightness—two quite different factors in mental growth. (A few years ago we were told that a feeble-minded child of 21 years of age, with a mental age of seven, had "the same mind as a normal child of a chronological and mental age of seven," but those of us who work with both classes of children know that this cannot be the case.) As indicators of the mental ability of individual pupils, the group tests are even more limited than the individual tests.[5] *It is apparent, however, that we have reached a stage in child measurement where we need more mental measures rather than the substitution of one or two mental tests for a complete psychological examination.*

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[3] For a detailed discussion of the nature, history, and general principles of intelligence testing and their administrative use, see the *Twenty-first Yearbook* of this Society.

2. *Teachers' Judgments*

In the majority of school systems the principal criterion, in fact in many schools the only criterion, for finding superior children is the teacher's judgment. In some instances this judgment is a rationalized process based on an intimate appreciation of the child's development and an understanding of the function of the modern school. In many instances it is the reflected bias of an ambitious parent or principal, or a narrow conception of the function of the school, or a meager knowledge of the relative values of the findings of special examiners and special teachers, or occasionally a desire to get rid of an idle, and therefore mischievous child through the means of 'passing it on' to the next grade.

An analysis indicates that the teacher's judgment may be based on (1) *previous ground covered;* (2) *the preparation to do next year's work;* or (3) *the ability to do next year's work.* If one, or all of these factors are included, the fact should be definitely indicated. The teacher's judgment may, on the other hand, be determined by a *single aspect of growth,* such as mental test, educational test, age, or some of the many other phases of development or training. If so, the judgment should specify this fact in order that the results may be checked or the methods made uniform. *The judgment may be modified by the teacher's attitude toward the child and toward the grade as a whole.*

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[4] Baldwin, B. T. *Physical Growth and School Progress.* U. S. Bureau of Education, No. 10, 1914. Pp. 215. See esp. p. 97.

[5] Baldwin, B. T. *Studies in Experimental Education.* Johns Hopkins University Studies in Education, No. 3, Chapter I, 1920.

It has been shown in many schools that in using teachers' judgments as a single criterion, as many superior children may be overlooked as are included. There should be three judgments, when possible, since the reliability is greater. These may be those of the teacher, the principal, and another special teacher intimately associated with the child. *Teachers' judgments may be the most valuable factor in school promotion of the gifted children when these judgments are based on objective scientific criteria, supplemented by other methods of selection from the measurements of the physical, mental, educational, and social development of the child by specialists in these fields.*

Psychologists are not trying to eliminate teachers' judgments. On the other hand, they are trying to use teachers' judgments where they are most valuable and to show teachers that there are many phases of development which can be accurately measured and evaluated independently of any one person's, or group of persons', observations. Not all phases of child development are subject to quantitative measurement. It would be very unfortunate as well as unscientific to assume that they are. Chief among these characteristics less subject to measurement are the personality traits, such as mental attitude, originality, and effort. *To attempt to select superior children for special school training without the use of teachers' judgments would be to mechanize education and pupil; to base selection on teachers' judgments alone would mean neglecting many years of scientific advancement in education and psychology.*

3. *Educational Achievement Tests*

During the last two decades scores of educational measuring scales have been printed and distributed throughout this country. These scales indicate a decided step forward toward measuring the achievement of pupils. Many of the scales are very valuable in school work and should be used freely when properly orientated in connection with other criteria for checking attainment. The newer tests combine from two to eight or ten subjects in one scale. Of the 300 or more scales now available, a very large number are either obsolete in their points of view or represent uncrystallized thought.

In selecting pupils for school advancement, the standardized educational achievement tests give direct aid and at the same time offer a tangible means of comparing the pupil's accomplishment with that of other pupils within the school and from other schools or other school systems by means of standardized scores or educational quotients.

B. Original Endowment vs. Accomplishment as Criteria of Selection

Many schools are using accomplishment tests as the chief or sole criteria for selecting (advancing) superior pupils. This is leading to a marked confusion between the problems of *native endowment* and *school achievement.* These two aspects of growth must be differentiated for analysis; they are not the same thing and at the present time a scale in one of these fields cannot be substituted for a scale in the other. As a general rule, intelligence tests aim to measure native endowment, while educational tests aim to measure achievement in school subjects. A few of the group scales aim to combine a measure of endowment with one of achievement.

Since many intelligence tests and many educational scales are now available for teachers and school principals, an effort is being made to rate one phase of a child's development in terms of the other, *i. e.*, by means of an achievement quotient (A. Q.). In the field of intellectual development, the mental age divided by the chronological age gives the intelligence quotient (I. Q.). In the educational field, the educational age for a particular subject, or group of subjects, divided by the chronological age, gives the educational quotient (E. Q.). The ratio of educational age to the mental age, or the ratio of the E. Q. to the I. Q., gives the accomplishment quotient (A. Q.). This is a measure of the child's school achievement in terms of his native endowment.

The *accomplishment, or achievement, quotient,* in the minds of a number of educators, furnishes the best means of selecting gifted pupils. Such a quotient undoubtedly is a step forward, but it is a serious assumption to take for granted that the achievement in one educational scale or the various scales should be identical with the score in another entirely different series of intelligence tests constructed by another group of workers and for a different purpose. The two scales may measure few, many, or no identical traits. The achievement quotient (A. Q.) sets one more or less arbitrary scale against another more or less arbitrary scale and if they do not agree, the child may be wrongly held responsible for the disagreement—not the scale. It must also be recognized that there are many factors, such as health, training, attitude, and application, which may interfere with, or accelerate accomplishment. It has by no means been established that accomplishment should equal endowment. There are individuals who seem to show for short periods, or during their entire life, latent, or even suppressed endowments; while, on the other hand, there are individuals who work to the very margin of their resources. In some cases the latter types apparently exceed in native endowment or in achievement by using the ideas or activities of others. There is also the problem of the unevenness of development in mental traits and abilities.

Achievement quotients, like intelligence scales, do not take into consideration the maturity factor, which varies with differences in physiological and social development of pupils of the same chronological age. A low achievement quotient assumes lack of application on the child's part, which may be frequently, but by no means always, the case.

The limitations of the other contemporary criteria listed earlier in this article, such as health, "probation," chronological age, school history, social development, effort, parents' permission, and demonstrated ability, need not be discussed in detail at this point; they are treated in the proposed constructive plan for selecting children outlined further on. The fact that not more than 6 of the 68 schools used any of these criteria shows that they are being neglected. The fact that only one school representative mentioned 'social age' and none mentioned 'physiological age' clearly demonstrates that the child as a unit is not being considered in the selection of gifted children for school work. In addition to the above, one should take into account the fortuitous educational factors such as home environment, social status, and similar influences (cf. the chapter by Miss Davis in this *Yearbook*).

III. Basic Principles of Child Development

A study of the best school systems, public and private, will show that there is no scientific evidence that superior children of the same chronological age should be in the same school grade. An analysis of a grade in any first-class school will yield evidence of considerable over-lapping in chronological ages within a grade. According to the writer's conception of grading schools, there is no justification for classifying in the same grade all children of the same chronological age with high I. Q.'s. This point will be elaborated upon later. It is doubtful whether all superior children of the same grade should have the same achievement scores in the same subjects, since gifted children frequently do better in some subjects than in others. *This condition—the over-lapping of abilities and traits—makes the administrative problem of advancing gifted or superior children much more complicated than educators have assumed. The problem is primarily one in* (1) *child psychology,* (2) *methods of teaching, and* (3) *the curriculum, and not one of uniformity in grading on a single chronological age or test basis.*

IV. The Normal Standard Child vs. The Superior or Gifted Child

In the literature on gifted children, it has been almost universally assumed that the child with a specially well developed mental trait or group of traits, regardless of the development of other traits, should be rated "gifted" or "superior." This concept is too narrow from the point of view of mental testing and entirely inadequate from the point of view of child development, if gifted children are those of superior intelligence according to the definition of Stern previously quoted. The term "gifted" should always be qualified by such words as *mentally, aesthetically,* and *physically.*

What is a normal standard child? For scientific purposes different phases of a child's development may be treated more or less independently for analysis and description, and later synthesized into a unity. In the past, scientists have tried to describe an ''average child'' at a given chronological age, without realizing that in so doing the wide individual differences which exist among children destroy or compensate each other. No such child exists. A new approach must be formulated which will preserve the integrity of the individual, differentiate specific traits, and also offer opportunity for a series of norms, or standards, in different aspects of growth.

For purposes of scientific analysis and explanation, the writer takes into consideration for every child, five parallel and interrelated ages: (1) a *chronological age* in years, months, and days, denotive of the temporal span of life—this is an arbitrary age and its importance has been greatly overestimated in educational work; (2) a *physiological age* denotive of the stages of physical growth and stages of physical maturity—this is the basic age; (3) a *mental age* denotive of the growth of certain mental traits, capacities, interests, and abilities; (4) a *social age or religious age* (the two may be combined for the purposes of this paper) denotive of the growth of social attitudes and the ability to make, adapt, and control social adjustments; (5) a *composite educational age* denotive of the rate and position in school progress. These five ages are all present at any chronological age of a child's development. A child may have reached its maximum in one or more of the four ages, excluding the chronological, yet be retarded in the others. For example, a boy or girl may have normal physical development and be retarded educationally, socially, or morally; or any of the other combinations may occur. He or she may be potentially normal with remediable physical and mental defects or disabilities which cause temporary or permanent retardation. Fairly accurate methods of measuring exist for the second, third, and fifth ages, and the approaches to the fourth are steadily being standardized. *In a normal standard child, each age is developing at a maximal rate of growth*.

with the physiological, mental, social, moral, and educational ages balancing each other.

What is a superior or gifted child? There is no definite line of demarcation, according to the writer's views, between a *normal standard child* and a *superior child.* For practical purposes the difference is one of degree of development and not quality. The *normal standard child* is not an average child, but is one of normal, all-round development, physically, mentally, socially, morally, and educationally. The superior children are in the upper percentiles for the distribution of normal standard children. *Probably the best means of classification would be to designate all children of "rounded," accelerated development as "superior," and those of special development as "gifted," or "talented," in a special phase of development*—for example, superior in development, gifted in intelligence, talented in music.

The present-day concept of the term *superior child* should be enlarged to include a more uniform development, which takes into consideration the unity of the child's personality. The concept should include the physical, mental, social, moral, and educational ages of the child, in addition to the relative development of special gifts or abilities in any one of these.

V. A Proposed Plan for Selection

A. The Minimal Essentials for Finding Superior or Gifted Pupils in School

When selecting superior or gifted children for school advancement or for the enrichment of their courses, four tests or lines of tests should be given:[6] (1) physical growth and physiological age;

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[6] As a practical preliminary step for locating possible children of superior ability, a group intelligence test may be given; the teacher may be asked to name her brightest pupils; the school marks may be compared; or frequently the youngest children may be selected.

In a large school system general directions may be necessary to the school principals in regard to double promotions or rapid acceleration. These suggestions should refer to such problems as (a) numerical limitations—for example, not more than 10 percent of a class; (b) the final mark—for example, 90 percent and over; (c) physical condition of the child; (d) maturity factors; (e) growth; (f) wishes of parents; (g) the desire of a pupil to remain in a particular school, rather than to go to a segregated school or to another school at a long distance.

(2) intelligence tests and general mental development; (3) educational tests, achievement and scholastic accomplishment; (4) teachers' judgments and ratings.

The results of these tests should be interpreted in the light of the children's social age and chronological age when those in the group are markedly different in these respects.

1. *Methods of Measuring Physiological Age*

From the writer's data based on five to twelve years' consecutive measurements and observations on the same children, it has been shown that children of the same chronological age may differ in stages of physiological development.[7] The physiological age of superior children has not been recognized or taken into consideration. Unfortunately, many of our leading psychologists are still using chronological age and physical age as synonymous terms. Some of the methods of determining the physiological age are:

1. *Stature.*[8] A study of several thousand individual growth curves based upon repeated measurements of the same children shows that as a rule tall children remain tall, and that short children remain short, although there are exceptions. Tall, large children reach their final stature earlier than short children. They are accelerated physiologically, *i. e.*, tall children are physiologically older than short children. Girls reach their period of final stature earlier than boys.

2. *Maturity.* Tall children mature earlier than short children. Girls are older, as a rule, physiologically speaking, at any chronological age than boys. The onset of adolescent growth and stages of physical maturation appear earlier for girls. For several hundred girls, the range of distribution for the period of first menstruation has been found to be from 10 to 17 years of age. Tall girls of the same nationality and the same social levels and relatively the

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[7] Baldwin, B. T. *The Physical Growth of Children From Birth to Maturity.* Iowa Child Welfare Studies, No. 1, 1921. Pp. 412. See esp. Ch. VII.

[8] Consult the Baldwin-Wood weight-height-age tables for American-born children. Printed by the Iowa Child Welfare Research Station, University of Iowa, 1923.

same environment mature earlier than short girls. The range for the period of the onset of pubescence in boys is from 11 to 17 years of age. Tall boys, like tall girls, are accelerated physiologically.

3. *Anatomical development.* Repeated X-ray photographs of the surface area of carpal bones in the wrists of boys and girls show that girls, as a rule, are older anatomically than boys, and that there is a high correlation of the development of carpal bones (both as to number and size) with growth in stature and with other criteria of maturity.

2. *Methods of Measuring Mental Age*

The individual and group methods of measuring intelligence are too well known or sufficiently accessible to warrant a detailed description here. For a very thorough and adequate account of the construction and use of intelligence tests, see Chapter II by Colvin, in the 1923 *Yearbook.* Whenever possible, ''performance tests'' should be included in the series, and all tests should be supplemented by an analysis of the emotional and aesthetic development by a psychologist, and by character sketches by teachers and principals. In the selection of gifted or superior children, all should be given individual tests, or in case this is impossible, group intelligence tests may serve for an intelligence rating which is only one aspect of mental age.

3. *The Relation Between Mental and Physical Growth*

In an earlier monograph,[9] the writer stated that if pedagogical age be accepted as a fair equivalent to mental development, tall, heavy boys and girls with good lung capacity are older physiologically and further along in their stages toward mental maturity, as evidenced by school progress, than short, light boys and girls. This conclusion is based on 21,682 final term grades and 5,000 physical measurements on 125 boys and girls from the Horace Mann School at Teachers College, Columbia University, and the Francis Parker School in Chicago, for a period of 5 to 10 years for each child.

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[9] See footnote 4.

In a report of observations in the Johns Hopkins Demonstration School[10] composed primarily of misfit pupils of retarded or average ability, the coefficient of correlation between height and intelligence rating for groups of boys and groups of girls ranging between 6 and 14 years was +.71 and +.72, respectively.

In our study[11] of mental and physical growth curves on a group of normal and superior children measured by the Stanford-Binet scale over a period of years, we found the mean "mental age" (intelligence age) of children above the average in standing height (physiologically accelerated pupils) higher than the mean "mental age" of the average children. The range of I. Q.'s of this group extended from 88 to 160, with a mean I. Q. of about 120. The heights and other physical traits of these children represent a fairly uniform type of frequency distribution with a majority of the superior children in the upper half when compared with the average group. The coefficient of correlation between "mental age" and some aspects of physical development for the children between five and fourteen years of age was +.89 for height and +.71 for weight. For height and mental age with age constant, as shown by partial correlations, the coefficient was +.53.

A comparison of the mean heights and weights for 623 gifted California children with I. Q.'s of 140 and upward, selected by Dr. Terman, shows this group to be considerably taller and heavier at each age for each sex than the Oakland, California, children listed by Barnes in 1892. These superior children are also above the averages of the writer's results for similar groups at Iowa City and Davenport, Iowa; Oak Park, Illinois; and Cleveland, Ohio. When compared with the writer's standards for American-born children, as given in the Baldwin-Wood tables, they are at the standard or slightly above, particularly in weight.

These studies show that, as a general rule, good mental development accompanies good physical growth during childhood.

In our Pre-School Psychological Laboratory, which 60 normal and superior children between the chronological ages of two and five and one-half years attend daily, we have classified the three groups primarily on the basis of physiological age and stages of mental and social maturity, as indicated by a series of tests and observations. For example, the range of heights for the lowest group of children is between 34 and 39 inches; for the second group of children, between 39 and 44 inches; and for the highest group of children, between 41 and 45 inches. The boys are relatively taller than the girls, and the X-rays of the carpal bones show similar stages of anatomical development for the children within a group. The teacher provides more projects and more opportunities of expression for the children of superior mental ability, as measured by intelligence tests, within a group. During play time, the physiological groups tend to form social groups, ignoring differences in chronological age.

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[10] See footnote 5.

[11] Baldwin, B. T. "The relation between mental and physical growth." *J. Educ. Psychol.*, 1923, 193-203. Also Baldwin, B. T., and Stecher, L. I. *The Mental Growth Curves of Normal and Superior Children.* Iowa Studies in Child Welfare, Vol. II, 1922. Pp. 58.

4. *Methods of Measuring Social Age*

A few good scales for measuring the social development of children are beginning to appear in the literature, although sociologists have, as a general rule, neglected first-hand studies of children. In the writer's experimental work special studies are being made of the social attitudes of pre-school children by means of consecutive observations and rating scales.

5. *Methods of Measuring Educational Age*

These methods have been discussed extensively in the *Seventeenth Yearbook*, Part II, and elsewhere.[12]

B. Types of Children That Should be Recognized in Any Plan of Acceleration

When individual or group methods of selecting superior or gifted children are used, the following five differences in types of children should be taken into consideration as far as opportunities and facilities permit; it is recognized that in practice it may be necessary frequently to make one or more of these predominating characteristics the sole basis on which the disposition of the child may rest.

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[12] See, for example: McCall, W. A. *How to Measure in Education*, New York, 1922; Monroe, W. S. *Measuring the Results of Teaching*, Boston, 1918; Monroe, W. S. *An Introduction to the Theory of Educational Measurements*, Boston, 1923.

1. *Differences in Chronological Age*

Chronological age differences are almost negligible if the other age differences are thoroughly taken into account.

2. *Differences in Physiological Age*

The principal differences to be kept in mind here in addition to *sex differences,* are the differences (a) between pupils of *mature development* and pupils of *relatively immature development;* (b) between pupils who are *well nourished* and pupils who are *malnourished;* (c) between pupils with *high physical achievements* and pupils of relatively *low physical accomplishments;* and (d) between pupils of *normal physical development* and pupils with *physical defects* or *handicaps.*

3. *Differences in Mental Age*

The mental differences among superior or gifted children are more difficult to note than the physiological, but nevertheless just as important. Some of the main mental and sex differences that should influence promotion or acceleration within a grade are (a) between pupils *mentally accelerated, as shown by verbal intelligence tests and pupils shown to be accelerated by means of performance tests;* (b) between pupils of *general superiority* (with or without special abilities or talents) and pupils of *average or mediocre intelligence* with special abilities or talents; (c) between pupils with *healthy mental development* and those with *special mental defects* or mental complexes of egotism, inferiority, race prejudice, emotional conflicts, and the like; (d) between *pupils with stable emotional reactions* and *pupils with unstable reactions;* (e) between *pupils who can manipulate ideas* and *pupils who can manipulate things;* (f) between *pupils with marked accomplishment reactions* and *pupils unable to function according to their endowments;* (g) between *pupils with quick glib reactions* and *pupils with slow intensive reactions,* either of whom may be *accurate* or *inaccurate;* and (h) between pupils who may be classified as of the *gifted, or superior, type* and pupils who should be rated as of the *'prodigy'* or *'genius'* type.

4. *Differences in Social Age*

In evaluating the social development the main differences to recognize in addition to sex differences are (a) between the *socially mature* and the *socially immature;* (b) between the *socially active* and the *non-social types;* (c) between those who can *manage or lead others* and those who *lack this ability;*. (d) between the *co-operative* and the *non-co-operative.*

5. *Differences in Educational Age*

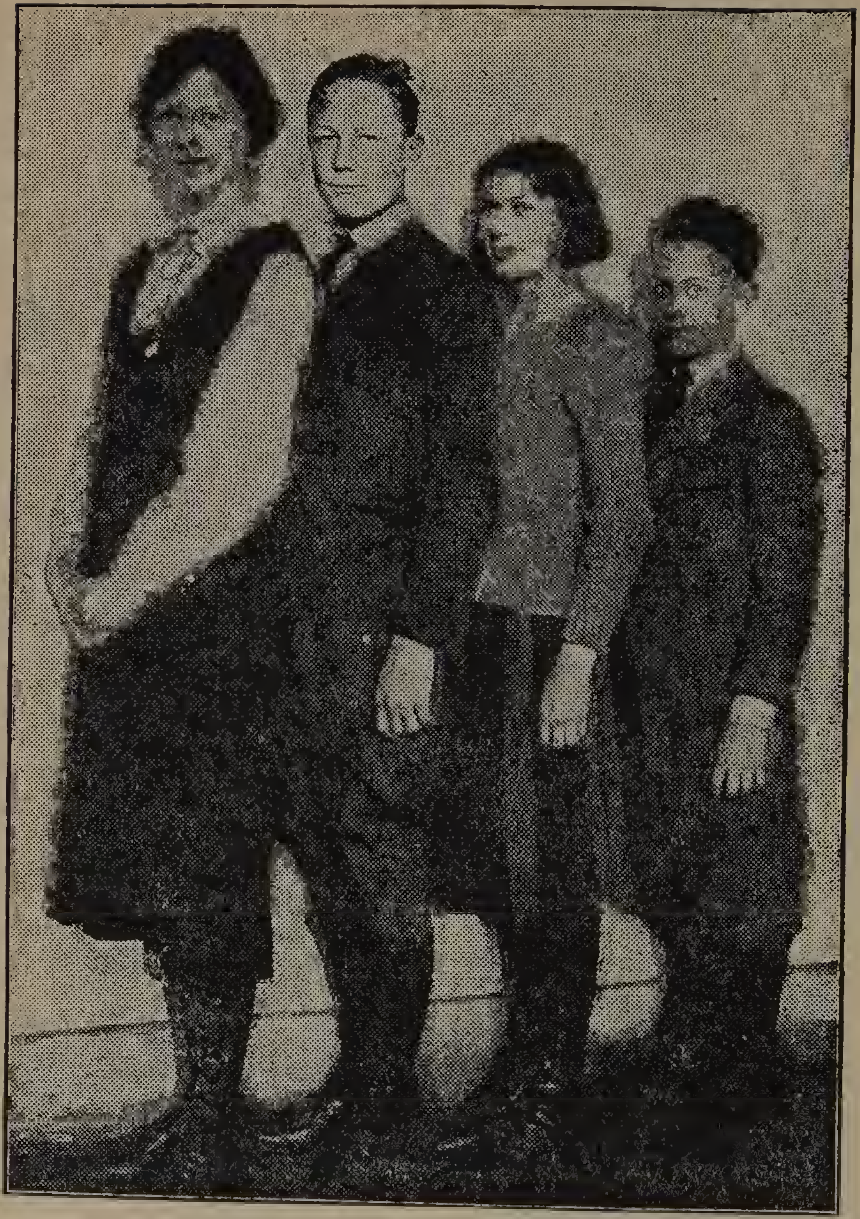
In the consideration of educational age, aside from sex differences, which should be recognized but usually are not, the main differences are: (a) between those who are *scholastically prepared* and those who are *mentally qualified;* (b) between those with *general educational abilities* and those with *special abilities;* (c) between those of *mature educational outlook* and *attitude* and those who are *immature;* (d) between those who are *educational followers* and those who may be classed as *non-conformists.*

The accompanying cut illustrates several different types of superior or gifted children for whom educational adjustments must be made on the basis of the principles formulated in this chapter.

1. The four pupils are of the same chronological age, within a few months (13 years old).

2. In physiological age they differ at least 4 chronological years, as is shown by their height and general growth, development of the carpal bones, and adolescent stages of maturity. The taller girl is 6.3 inches above height for her age and sex, and the smaller boy 0.8 of an inch below the average for his sex and age. The smaller boy is prepubescent; the taller girl matured at 11 years of age. The taller girl has completed her adolescent acceleration in growth in stature, and the smaller boy has not started his accelerated period.

3. All are above 130 I.Q., the difference in performance on this scale being probably correlated with the maturity factor.



These four children are of the same chronological age, but they differ in psysiological, social, and educational ages.

4. In social age or stages of social maturity, as shown by social attitudes and participation in school and extra-curricular activities and in clubs and parties, the differences are as marked as the differences in physiological age.

5. In educational accomplishment, as measured by subject matter, the range is three years. The smaller boy is in the 9th grade with much supplementary work including manual training, the construction of radio sets, the collection of stamps, a large amount of reading, and art work; the larger boy is in the 9th grade with extra subjects; the smaller girl is in the 10th grade with some supplementary work and musical training; and the larger girl is in the 11th grade with "A" work in all subjects, but little or no supplementary work. In educational tests the range is smaller.

C. The Basic Method of Selection for Grade or Group Enrichment or Acceleration

The problem of advancing the superior child in school work is not so simple as has been assumed. While it may be possible in many instances to deal with relatively large groups of superior children in a class, it must not be forgotten that the variability of these children is greater than that of average or retarded children. On the other hand, relatively accurate methods of prediction in physical and mental growth are now available.[13]

A few general principles may be laid down.

1. *Acceleration upwards through the school grades, by utilizing the methods already outlined, should be the principal way of advancing superior or gifted children who are physiologically accelerated (those children who are relatively large for their age, sex, race, and social status). This is particularly advisable for those children who are mentally and socially mature for their chronological age. These children may safely be accelerated two, three, or more grades if thoroughness and accomplishment are also considered These children will complete the course at an early chronological age with superior knowledge and training on account of their superior ability and advanced stages of maturity.*

2. *For superior or gifted children who are not especially advanced in physiological age, but of different I.Q.'s, the acceleration should be accomplished in a horizontal direction, by means of some type of grade sectioning on the basis of I.Q. For some of these pupils acceleration should be by means of an X, Y, Z division*

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[13] Baldwin, B. T. "The scientific prediction of the physical growth of children." Reprinted from *Eugenics in Race and State,* Vol. II, 1923.

within the grade, while for others additional subjects should be provided, elective courses in special fields, special training in physical education or other forms of supplementary work and excursions—the latter especially where the home environment is limited or where the pupil tends to be of a 'narrow gauge' type, mentally and socially. These children will complete an enriched school course at the average age.

For those superior or gifted pupils of really exceptional ability at any maturity level, the enrichment should mean an opportunity at their maturity level for further investigation or participation (*research*) into a subject or activity with the burden of the methods and results of the investigation or participation resting on the pupil and the burden of the suggestions for facilities resting on the teacher. These children may complete the school course at approximately the average chronological age, earlier or later, but with greatly enriched information, enriched attitudes, and enriched training in methods of approaching problems or taking part in school activities when compared with the average pupils.

3. *For the glib, clever, bright children of the superficial type, training in accuracy and thoroughness should be the principal objective in all of the grades and all of the groups through means of utilizing their predominant interests. These children are the most difficult to train in school, and they frequently dissipate their energies and those of others after they leave school.*

4. *For the genius or prodigy, who is very rare, a more specialized psycho-educational study must be made.*

Gifted or superior children may be *forced in school* to unusual accomplishment in any of the methods outlined above, regardless of their welfare. *Any flexible modern school system should be able to adapt its administration and instruction to these three fundamental methods of selecting and training superior or gifted children.*

VI. THE IOWA-CLEVELAND INDIVIDUAL SCALE FOR MEASURING THE DEVELOPMENT OF NORMAL AND SUPERIOR CHILDREN FOR ACCELERATION IN ELEMENTARY AND HIGH SCHOOLS

The *Iowa-Cleveland Scale* for selecting normal and superior children for school promotion and advancement has been designed by the writer.[14] This scale provides for the successive recording of *physiological age* in terms of physical condition, dental condition, nutritional condition, physical growth, physiological maturity, physical achievements, and environmental influence. The *mental age* is recorded in individual tests, group scores, and maturity ratings. The *social age* is recorded in tests and judgments on basic social traits and attitudes, and in stages of social maturity. The *educational age* is recorded in standard tests, ratings on scales in various subjects, personality traits, and the teacher's final marks and estimates. Supplementary provision is made for recording special abilities.

The scale is provided with a diagrammatic profile which indicates the degree and the uniformity of development of each child.

VII. Problems for Further Investigation by Teachers

1. Do superior or gifted children learn differently from the normal or dull children? If so, how? Is the difference one of rate or quality? If children do differ in these respects, how should methods of instruction in specific branches differ?

2. Are there differences in quality between dull, normal, and superior children in the special abilities, personality traits, language abilities, motor control, aesthetic appreciation, and leadership?

3. Is intelligence, in the accepted sense of an I.Q., the equivalent of scholarship, or do industry, accuracy, appreciation, methods of work, persistence, and attitude toward the problem at hand play an indispensable part in child development? If so, how may these two aspects of development be combined?

4. Should the selection of gifted children be early in the course in order to awaken new interest and to inculcate correct habits of study or at least avert the development of bad habits of study? Or should the emphasis be placed on the acquisition of the 'fundamentals of instruction' for all children, with later differentiation of the course of study?

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[14] See the *1924 Yearbook of the Department of Superintendence of the N. E. A.* The scale will be published by the World Book Company.

CHAPTER III

PROBLEMS OF ORGANIZATION

Whatever may prove to be the explanation of the present status of official thinking on the subject of the varying abilities of children, and the consequent responsibility laid upon school managers as soon as the variability is acknowledged, it is certainly a fact that there is much administrative timidity before the problem of organizing and conditioning practice to meet the newly conceived needs of superior children.

Progressive teachers, students of education, psychologists, and psychiatrists all over the country are increasingly alive to the extent of the waste of unused powers of gifted children under the accustomed procedure of the schools. It is imperative that convictions be spread abroad promptly that the waste is of serious import to the welfare of our society, and that its elimination be recognized as a major duty of school officials and as a legitimate charge against community finances. A survey by questionnaire and invitation "to tell the rest of us what you are doing" elicits evidence enough of the sort of undynamized desire and intention that expresses itself in the Ozark country in the oft-repeated phrase "I 'llow I'm goin' to do it;" and often enough to make optimism valid, discloses well-thought-out plans 'to begin to discover a way' to the solution of at least some of the problems that the situation presents.

The brief reports of experience in the following pages represent fairly well the various kinds of procedure by which schools have attempted to attack this problem from the standpoint of class organization, and while inconclusive in the main, they hold suggestions for school executives to follow or to avoid.

It is probably fair to assume that schools from which there is "no reply" to the Committee's inquiries are doing nothing for reasons of local difficulty, or are not yet interested. The number of them is rather a large proportion of the total number reached by the Committee. Perhaps, however, many of the "no reply" situations are explained in the following: "School people in this state have given evidence of much interest in the education of the gifted as well as the mentally handicapped. After receiving your letter, I discussed with some of them the advisability of contributing material to the *Yearbook.* The general public is actively interested in education, but here, as elsewhere, is not educated to an appreciation of the differences in the native endowment of school children. In order to prevent any possible interruption of the progress we have made in grading and providing adequate educational facilities for our children in the schools, we are working *as quietly as possible.*'' Again, from a region thousands of miles away from the above: ''I have succeeded in getting a little better classification by grouping into A, B, and C sections. I make a little difference in the curriculum of these sections but *am forced to work very slowly in this conservative community.*''

A step in advance is indicated thus: ''We are strongly convinced of the necessity for them [classes for the gifted], but have been hampered because we had to wait first for public opinion, and then for building space. We plan to begin soon and hope to have the gifted groups all in one building, and to give them an enriched curriculum.''

For places where superintendents cannot for some reason get any sort of special organization under way, there is considerable value, by way of preparing the field, in the suggestion: ''I have mainly given my attention to getting the teachers to try to make some sort of a discrimination between gifted pupils and regular pupils in lesson assignments, outside reports, minimal requirements, etc.''

In this connection, it may be well to call attention to the fact that the preparation of the teachers for the work with superior children has proved to be a serious difficulty in the experimental stages of class organization. Among the evidences, from Ohio comes this: ''In the elementary classes, *the teacher furnishes the largest problem.* It is difficult to find one who will throw the course of study aside and make it an experimental school, in which the interests of the child are considered first.'' From California: ''In 1921 we did have one experimental group of twenty-five superiors who remained with the same teacher throughout the year, and who covered 4B, 4A, and 5B work in two semesters. Unfortunately, we did not have another teacher of the same type to carry on the good work—and the possibilities remain unsolved.'' There will doubtless be complete agreement on the part of superintendents who are attempting to solve this problem, with Dr. Whipple's ''conviction that for the fullest success, teachers of superior pedagogical skill and equipped with a considerable stock of general information are needed.''[1]

By a plan that indicates a recognition of the need to give some opportunity to the children without reorganizing the school work, Mr. B. J. Rohan, of Appleton, Wisconsin, has developed various *clubs* for studying particular things of interest in the seventh and eighth grades. He notes ''a literary club which publishes a newspaper every week; a forestry club which is studying tree surgery and forestry; a teachers' club which is studying good elementary books on pedagogy; and a radio club.'' This plan may perhaps be found useful elsewhere for educating the public up to an understanding of the variability of endowment among children, and prepare the way for some organization of the schools to take care of them.

In many places individual superiors are selected in the elementary schools for *special promotions,* or grade skips, where no provision is yet made for separate classes for the gifted. This method easily takes care of large numbers of cases, but is accelerative only, and in most instances gives no evidence of basing choices of the child on scientific data, or of consistency of plan. Some reports, as from Newton, Massachusetts; Hinsdale, Illinois; St. Louis, Kansas City, San Diego, and others, indicate that children are usually selected by supplementing the judgment of the teacher with intelligence and accomplishment tests.

There is considerable evidence of great caution being exercised lest children be ''rushed through school,'' and infrequent evidence of the consideration of other 'ages' than the chronological in the granting or withholding of the opportunity for rapid advancement.

A suggestion of interest on this point comes from H. D. Vincent, of School III, Troy, New York:

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[1] See supplement to September 1923 number of *Mother and Child.*

''It is with pleasure that I comply with your request by reporting what was done in this school in the way of allowing children to 'skip grades.'

''Until last year the method of promotion in our schools has been open to criticism. Children were promoted entirely on the basis of *examinations* made by committees appointed by the superintendent. The examinations were declared to be proper by the makers. Children were given the examinations and marked by as many standards as there were teachers. The examination papers, or so-called tests, were tested first and last on examination day, then junked. Religiously have we guarded against ever giving the same paper twice! The passing mark has been 75 percent, which means that a child who gets 74 percent was to do the whole year's work over. No one has asked what a passing mark is 75 percent of. I suppose because no one could answer the question. In fact, we have been accepting teachers' 'sagacious divinations' without tallying up with realities.

''For several years I have been realizing how weak our system has been; so during the summer of 1922 I took Dr. McCall's course in educational measurements at Columbia. My chief aim was to master his 'T Technique,' which I did to my own satisfaction. I worked the entire 'Technique' in my entire school in January, 1923. The results were both astonishing and gratifying—astonishing because they revealed how poorly my school was graded, gratifying because they gave me an opportunity to correct to some extent the poor grouping in my school. It was understood with the superintendent that no pupil who had been regularly promoted should be demoted. New pupils on trial could be placed where they belonged. Any pupil who ranked two or more grades above the grade already in could be given a trial in the next higher grade. If at the end of the year, the pupil proved that he could do the work as well as the average in the class, he would be promoted, that is, 'skipped' over one year's work. There were twenty such pupils in this school, about 6 percent of the school. For reasons unavoidable three pupils moved away before the end of the year, but I am proud of the fact that those who remained with us made good and in most cases showed better results than the poorer half of the class to which they were advanced. In one or two cases such pupils ranked about first in the class. At present, all are making good. In one case only the work seems a little beyond the pupil. Still, her teacher admits that she does better than many others in the class.

''It may be charged, as stated before, that, by skipping, a pupil may miss some fundamental work. I have answered that criticism in this way. Either they get it somewhere or in some way, or else it is not worth getting; for such gifted children get there in the end.

''Of course, in my school no pupil skipped entirely a whole grade, the skip being made at midyear. Personally, I like this better than skipping all of any one grade. Still, in some school systems where, for instance, much review work is given in the fall it might be better to make the skip then. I am ready to admit that a still better plan would be to have opportunity classes where pupils might get rapid advancement and not skip; but we have no such classes and I know of none in this neighborhood. And so, lacking such, I am not willing to make the gifted child keep step with the slow without any chance at all to get a special promotion.

"In reply to your question as to what grades are best for skipping, I would say that first, I would not skip the first or eighth. In the other grades I cannot state any particular reasons for not skipping if the pupil is sufficiently gifted. I expect, however, that opinions will be guided somewhat by the course of study a city follows."

To prevent "complete loss of fundamentals that might be entailed" in grade skipping, it is not unusual to find some sort of plan for covering the skipped ground. In Sioux City, Iowa: "We maintain in our different grade schools *special aid rooms.* The special aid teacher works with small groups of pupils that the teacher and principal decide can cover additional work or make additional grades by means of special aid being given in certain subjects and at certain times. *We never have more than four pupils in one of these groups.* We do not remove pupils from the regular work of the grade school but give them this special aid at such times as will cause least confusion to the school and to their work. The pupils then, when ready, are quietly transferred from one grade to another, and their promotions made without any great advertisement. We try to make this work as inconspicuous as possible. We do not in any sense ever advertise that any work we do is especially for gifted children."

The cost of carrying an extra teacher to care for very small groups may be prohibitive in many systems. Frequently, however, there are assistant principals, part of whose time may be assigned to the superior pupils, as in San Diego, which reports "women vice-principals who act as *coaching teachers.* Where the mental ability indicates the safety of advanced grade work, these vice-principals arrange flexible programs for the 'specials' and also parallel the class teacher's instruction. They aim to remove the failure to make good in a new environment, and also safeguard the children against loss in fundamentals in the grades that may have been skipped."

San Diego adds a note of a unique plan occasionally followed, "of dismissing the class proper thirty minutes earlier than the advanced section,'' thus providing the class teacher with an additional period ''which is devoted exclusively to these cases.''

In Denver, the Whittier School, under Mr. H. W. Zirkle, has carried on consistently for some years a *special plan of acceleration* that has been satisfactory as a saver of time, and as such is worth reading. Mr. Zirkle reports:

''I think the ideal scheme would be to have a sufficient number of these pupils with a high I.Q. to constitute a class by themselves and then do both—give them a broader and richer course and also take them over it more rapidly. This can be done in a very large school or in groups of schools aggregating something like 3,000 or 4,000 pupils. Three thousand pupils ought to furnish sufficient exceptionally bright children to make a good sized class in each grade. These ought to be segregated, beginning about the third grade and kept in a separate class throughout the grades and the high school.

''Our school being small—only about 1,000 average enrollment—we could not follow the plan of permanent segregation. As the most feasible scheme possible within our limitations we hit upon the following plan:

''Children selected for acceleration are taken from their regular room and placed in the room devoted to this work. These pupils continue the work as in the regular room, though more rapidly, till they have caught up in all the main subjects with the class just half a grade ahead. They are then placed in the advanced class, thereby having gained a special promotion.

''While in this room, writing as a separate exercise, music, the regular period with the playground teacher, and drawing are suspended. (We are now planning to give them half time in drawing.) All the other subjects of the grade are taken, the pupils making rapid progress by reason of their ability to acquire. In mere drill work less is needed than in the regular class. The opportunity to make a special promotion stimulates the pupils while in the room to greater exertion.

''Usually another class for the special room is then selected from the class to which the special promotion is made to prevent over-crowding; and in this manner the work is kept up through the school year. Two classes, or grades, aggregating from twenty to twenty-five pupils, are kept in the room at the same time.

''The time allowed each class to accomplish the work of catching up with the half grade just ahead is nine and one-half weeks, or half of the semester. Thus four sets of pupils aggregating about one hundred have an opportunity in the room each school year.

''Two classes of children are eligible—those with superior native mental ability and those who have, for some reason, become retarded and are capable of restoration to their proper grade.

"Factors: (a) Class standing, (b) mental ability, as determined by the Stanford Revision of the Binet-Simon Intelligence test, (c) effort, (d) physical condition.

"The two most important factors are the class standing and the mental age. Experience in this room has proved that a child is capable of acceleration until he has reached the grade corresponding to this mental age. Thus, a child of nine with a mental age of eleven, if he has the proper opportunity, can be accelerated at this age till he reaches the sixth grade. He ought not to be pushed beyond. On the contrary, a child of eleven with a mental age of nine ought not to be beyond the beginning fourth; but, if he has not yet reached the fourth, he is capable of acceleration up to that point. In other words, a subnormal child, retarded below his mental age, is capable of acceleration to the grade corresponding to his mental age.

"In some instances, when we were unable to find a sufficient number of bright pupils of the grade selected to fill up the class, the slower pupils of the grade just above were permitted in the class, thus giving them an opportunity to strengthen themselves in the work just gone over, and at the end of the period to be restored to their regular class. It was found that these pupils were always inferior to the bright pupils in the lower class. It did some good, but would hardly pay for the expense of an extra teacher.

"The plan is simple, inexpensive, and easily operated, one teacher being able to care pretty well for the bright pupils in a school of from 1,000 to 1,500. The reason it is so little used, I think, is the ignorance of the principals and teachers of the actual number of superior children they really possess. These children exist everywhere, just as the subnormals. Both ought to be sought out and cared for. Many a time in the last twelve years have I sat in my office and wondered where my next class was to come from but on investigation the class every time was found, and very rarely have we pushed a child beyond its mental capacity. Since the intelligence tests have come into use, there is no necessity for this to happen at all. Before we used the tests, we had to consider the chronological age largely as a factor, which is not reliable. Even here we were doing what many are still doing—accelerating the subnormals and retarding the gifted.

"If a child is capable of making more than one special promotion, he is retained in the room with the new class entering, or he may be returned to the regular school and be selected again when the opportunity comes. Some children have made as many as four special promotions before leaving the eighth grade. Our aim is to advance them to a point where they will find opportunity for the exercise of their superior intelligence. It is based on the theory that when a child has once reached the grade corresponding to his mental age, he will then be required to put forth a normal effort to keep up with his class.

"Careful record is kept and observation made of these children after special promotion and it is found that as a rule the large majority of them continue to be among the best in the class. Rarely one fails and loses what he has gained.

> "This room has been run on this plan continuously for the past twelve years and has demonstrated its usefulness in the lives of nearly 1,000 different children, by putting them creditably through the grades from a half to two years earlier than they otherwise would have been. Many of these children have gone on through the high school and college never missing a single promotion throughout their school careers. Measured in dollars and cents, reckoned on the number of promotions made by each regular teacher, it has been a saving to the district of the salary of one teacher each year throughout the whole period, which in Denver means nearly $15,000.00."

A mode of acceleration, commonly known as *"preparatory centers,"* that has been in practice for twenty years in Worcester, Mass., is described by their bulletin as the forerunner of the present junior high school plan in conception. In effect, however, it seems rather a device for shortening the high-school years by introducing high-school subjects into the grades, for which work the pupil receives high-school credit. There is no claim for enrichment of experience made for the plan.

There are five preparatory schools in Worcester which pupils may enter who are of more than average ability (that is, who rank 75 percent or more in English, geography, history, and arithmetic), and who wish to shorten their high-school course or to get a more complete knowledge of French or German. They must have completed the sixth year of the eight-year course and be recommended by their principal. They remain in these special centers two years. We admit, says the report from Worcester, all applicants who have good health and who have maintained a good standing in their classes. We insist upon these two requirements, inasmuch as the work in the preparatory schools is somewhat heavier than in the elementary schools. Pupils take the same studies as in the regular grades, with the addition of Latin and French or German. In order to enable them to do this, the work in arithmetic, geography, and especially grammar is lightened. On entering the high school these pupils join the second-year classes in Latin, French, and German. They are thus enabled to complete the high-school course in three and one half years, while many graduate in three years, with good preparation for college.

Indianapolis, too, has had an arrangement by which bright children in the seventh and eighth grades of the departmental schools could take one half year of Latin and algebra for high-school credit; and if the excellence of their work in civics, English, and sewing warranted it, one-half unit's credit might be had in those also.

There is a notable frequence of expressions of doubt as to whether hurrying bright pupils through the regular curriculum of the grades and into the high schools at a very early age is, after all, profitable. In all quarters are evidences of a search for plans of organization that will make it possible either to segregate special groups or to arrange classes into ability groups, each of a degree of homogeneity that will render differentiation of the curriculum easier to manage, so as to give the superior pupils programs of enrichment as far as their capacity permits, with or without acceleration of progress in time.

Very recent reports from *Los Angeles* indicate that there are under way two significant pieces of work, the data on which, when available, will be suggestive, if not conclusive, to other systems of that size. There are five experimental classes in Grades VI, VII, and VIII, in which every pupil has gained admission by National Intelligence tests scores above 120. They are working through a special curriculum, not yet in print, and up to the present there are no data as to the benefits which accrue to these pupils.

Indicating the undertaking of experiments of wider scope, Los Angeles is reclassifying schools generally on the basis of the McCall Method, establishing X-Y-Z classes. Progress has not reached the point of modifying the curriculum, but for the X classes an enriched program is planned.

Columbus, Ohio, after experimenting with a special class for gifted pupils, abandoned the plan. Although two full years of time had been gained before entering the eighth grade of the junior high schools, administrative difficulties, mal-adjusted social relationships, besides complications due to change of teachers, have elicited the opinion that the experiment has not proved entirely satisfactory. Instead, Columbus is planning to provide additional work for superior pupils in their normal grades, and hopes to accomplish a combination of enrichment of course with rapid promotion.

From *Rochester, New York,* comes evidence of a successful organization of segregated classes for gifted pupils that is readily applicable in groups of schools, and which will repay study in that it includes other purposes than acceleration as to time alone.

"In September, 1920, we organized two accelerated classes. These classes served as centers for certain schools. Each class was composed of thirty pupils who were selected from seven contributing schools, that is to say, approximately fifteen schools of our system had the opportunity to send pupils to these classes. No pupil was permitted to enter the class who, upon examination by our Child Study Department, had an I.Q. below 120. These classes were begun as Fifth B Grade classes. Our plan is to have the same teachers carry these groups for two years, from the time the pupils enter the class until they are sent to the junior high schools.

"Our main purpose is one of enrichment, rather than acceleration as to time. We make no attempt, however, to hold these groups to the rigid requirements of the regular course of study. As rapidly as the group is able to begin the work of the next grade in any subject, this work is taught. In every way we endeavor to give these children a more enriched curriculum rather than the minimal essentials of the regular curriculum in a shorter space of time.

"In September, 1922, we opened the third class on the same basis with the others. In September, 1922, our first group entered the junior high school. Arrangements were made to have the class appear in the junior high school organization as a unit. Other pupils have been added to the class from time to time. Of the two original classes, one furnished us the best opportunity for studying the entire experiment because we did not have to change the teacher during the entire period of two years. We have followed the work in the junior high schools done by the class which was taught by the same teacher during the two years. This class has a very excellent record. These teachers have kept an accurate record of the extent to which the present course has been enriched."

Detroit has had Special Advanced Classes since September, 1915, and in June, 1923, Miss A. M. Engel reported "three centers, with four classes in each center, namely, B and A Seventh, and B and A Eighth. Each center had two teachers and also received help from the regular school staff in music, art, manual training, domestic science and sometimes in school subjects. Teachers were all rated A and had the personality, experiences of travel, and study needed for this type of class. They were resourceful, earnest, and stimulating. They received two hundred dollars a year above the regular salary." Extra part- or full-time teachers were assigned by the school to these classes for recitation work.

Since children came to the centers from long distances and brought their lunches, the day's program was scheduled between 8:45 and 2:30, with a short supervised lunch period.

"Because of the generous help received from the regular school organization, more recitations were possible in the Special Advanced Classes than in ordinary rooms. This arrangement did not, however, allow much time in school for preparing lessons, and much had to be done outside of regular school hours." The report comments on this fact as follows:

> "It would seem that a consolidation of classes might easily be made. Larger topics of interest might well be carried on in a classroom with less attention paid to the old grade groupings. One scarcely remembers whether a certain piece of information was learned in one grade or another. Grades are arbitrary groupings after all. It seems also that these children ought to be able to do almost all of their school work in the classroom and so allow more time for outside reading, athletics, social activities, and the development of special ability. No effort was made to accelerate these pupils, but each subject was enriched by going into more detail and doing more outside reading. Actually, however, acceleration did take place, as the children entered the high schools with credits in Latin and algebra, and often in English as well.
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> "When we look at the school records of the children, we find that nearly all of them had skipped grades before entering the Special Advanced Classes. More had skipped B-Second than any other grade. When they reached this point, they had probably mastered the mechanics of reading, which was about all that is required of them. Both the B-Third and the A-Fifth grades showed a much smaller percent of skips than any others. It is in these grades that retardation in the Detroit school system is greatest."

The Detroit experiment should be carefully studied by administrators who are planning similar work. In his report for 1922-23, Superintendent Cody says that "accurate reports are being kept of the work done, and it is expected to use the data in planning for X sections throughout the city."[2]

ORGANIZATION FOR GIFTED PUPILS IN THE JUNIOR HIGH SCHOOL

The junior high school, in gathering together sufficient numbers of pupils in its various grades to necessitate sectioning, is affording the best opportunity that has yet been developed for sectioning according to ability. This is being done everywhere, and as a rule in three groups, but sometimes in more than three. It is almost universal that the best group has saved one or more terms in the three years of the junior course. But here, as in elementary acceleration, there is a growing belief that the opportunity for differentiating the curriculum as afforded by junior-high-school organization, presents possibilities of enrichment of experience more valuable, perhaps, than even the saving of considerable time.

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[2] See Chs. I and XII for additional information concerning the work in Detroit.—*Editor.*

According to Principal H. H. Ryan of the Blewett Junior High School, St. Louis: "That some deliberate provision for acceleration is wise seems obvious. If groups of the superior type are to furnish large numbers of professional men who must go through college, professional training, and a starvation period, a year saved here and there is worth while." But "Who shall be accelerated? How shall it be done?" are two real questions that Mr. Ryan's experience may throw some light upon.

"The Blewett Junior High School has had the majority of its pupils working on an accelerated program. One section of each incoming class, the so-called 'A' section, has customarily completed the three grades, VII, VIII, and IX, in two years. Another section, the 'B' section, has completed the three grades in two and one-half years; and the third, or 'C,' section has proceeded at the normal rate.

"While this policy has been justified by the results, there have been difficulties here and there which have impressed us with the fact that the plan must be administered carefully in order to avoid accidents of the type which sometimes occur in the handling of sharp-edged tools. We have had a few cases of failure in the senior high school for which no explanation could be found either in the native endowment of the students concerned or in their work in the Blewett Junior High School. To avoid such cases, changes were made in the manner of classifying, chiefly in the matter of the percentage of the incoming group working on the accelerated program. The 'A' section came to be limited to about 20 percent of the group. This resulted in minimizing failures among 'A' students in the senior high school.

"In spite of this satisfactory adjustment of the academic phases of the situation, there remained on the part of some of the senior-high-school teachers some resentment on account of the immature appearance, manner, and philosophy of some of the accelerates. It was necessary, therefore, to make a study of the characteristics of the pupils other than school ability.

"We finally decided to be guided by the counsel of Woodrow, Baldwin, and others and to attempt to base the selection of the 'A' group on the degree of general maturity. We enlisted the sympathy and active aid of the teachers and the principals of the tributary elementary schools, the school physician and nurses, and the director of tests and measurements. As a result, we received, in December, 1922, a wealth of information concerning each child who was scheduled to enter the Blewett Junior High School February 1, 1923. The following items were included: (1) general ability rank in class, as estimated by the elementary school, (2) chronological age, (3) mental age, (4) intelligence quotient, (5) reading rate score (Monroe), (6) reading comprehension score (Monroe), (7) arithmetic fundamentals score (Monroe), (8) height, (9) weight, (10) dentition age, as estimated by the school physician, (11) social age, as estimated by the elementary school, and (12) physical status, or condition of health, as estimated by the school physician.

"By means of age norms we translated into ages such of the data as were not already so stated. The social age was judged by the elementary-school teachers on the basis of the age of the companions sought, the games enjoyed, the general maturity of bearing, etc. The weight in relation to the height was taken as one indication of the state of health, the doctor's estimate as another.

"In determining the personnel of the 'A' group, the following standards were adhered to: (1) no pupil was included whose intelligence quotient was less than 120; (2) no pupil was included whose pedagogical skills were not above the median; (3) no pupil was included who was retarded in physical or social development; (4) no pupil was included whose health was marked 'poor' by the physician.

"As matters now stand, the 'A' group and the highest 'B' group are of about the same average intelligence. The 'A' group, generally more mature, is doing the work of the three grades in two years. The 'B' group is taking two and one-half years for the course, and its work is to a corresponding degree enriched."

From teachers within the school come comments in the following terms after experience with the classes:

"This second half-year's experience with my present 'A' group only strengthens my earlier impression that the selection of this type of pupil on the basis of general maturity is a step in the right direction. Their school performance and their splendid habits of attention make them responsive in a high degree to a large field of work. With one exception—a discipline case due largely to home environment—there is an even all-round development. While the academic subjects have the strongest appeal, there is a very wholesome regard for the arts and athletics. Initiative and group spirit are strongly in evidence. A fine attitude in citizenship makes them eager and ready to serve in all the activities of the school."

Another compares the 'A,' or maturer, group with the younger 'B,' thus:

> "The pupils of the 'A' and 'B' groups are alike in that they do excellent work and show great enthusiasm for it. In their methods of attacking a new project the difference between the two can probably best be seen. The children of the 'B' group set about their work with noisy enthusiasm. In the end they produce a brilliant piece of work, well executed. Those of the 'A,' on the other hand, go about their work with quiet dignity, but are none the less enthusiastic, I believe. The 'B' children, being less mature physically than the 'A,' are more playful, more forgetful, and consequently less reliable. In that they present a problem not easy to solve, I find them less easy to teach, but more interesting than the 'A's.'"

In the secondary schools the wide elections of courses and subjects now commonly offered take care to some extent of the varying ability of the pupils. In the *Sixth Yearbook of the National Association of Secondary-School Principals,* is a contribution by Ray H. Bracewell, Principal of the Burlington High School, Iowa. In it he demonstrates that sectioning of classes according to ability into groups is the best method of taking into account individual differences, and recites numerous advantages of sectioning as he sees them. Elsewhere he says:

> "For some years we have segregated our children into groups according to ability as indicated by intelligence tests and previous grades. In every instance we have arranged the program so that the different sections fall within the same period, making it easy to transfer a student from an 'A' section to a 'B' or *vice versa* as the character of his work may change.
>
> "We have attempted to build the whole school program around the practice of testing students and varying the course of instruction and work of the class to meet the needs of group differences. I suggest that we are making segregation a part of our school program in contrast to certain schools who tend to carry on experiments with certain classes. This eliminates much wasted effort and energy.
>
> "While we use intelligence tests to a large extent and, we think, effectively, from the standpoint of economy, we do not depend upon them as a final criterion in making assignments to ability groups. Students are placed in an ability group the first year on the basis of the recommendation of their grade-school principal and on the basis of their intelligence test. After the first semester they are placed in ability groups on the basis of their grade-school record, their intelligence test, and their success in the high school in similar work. In all cases we make it possible for a student to transfer from an 'A' section to a 'B' section, or in some cases to a 'C' section, without

being transferred to another period. In other words, a class with us consists in fifty, seventy-five, or one hundred students to which two, three, or four teachers are assigned, all sections meeting within the same period. What I have attempted to say here is that, in the end, accomplishment is the final factor in determining the section to which a student will be assigned.

''We are attempting at this time to work out a technique for teaching 'A' sections as contrasted with 'B' sections. This is not easy and we have not progressed far. We have also attempted to vary the content of the subjects according to the needs of 'A,' 'B,' and 'C' sections. In general, we attempt to give our better students a broader course rather than to accelerate their progress through school. In the end our objective might be best expressed as follows: The goal of a democratic high school should be to adjust itself to provide for each student to attend school for four years, pursue those courses, and follow those methods that will best equip him to attain his own highest standards of excellence and to accomplish his own maximum development.''

An organized system of promotion and differentiation has been developed in *Providence, R. I.* All school principals were consulted in the formulation of the policy and it is working apparently satisfactorily from the administrative point of view after five years of development:

''Our program calls for a slight acceleration during the first six or seven grades, not to exceed two years, of children who are superior or very superior both in achievement and intelligence as measured by achievement and psychological tests. When such children reach the high school or junior high school age, they are then classified according to ability for the purposes of guidance, enrichment, and differentiation. Our classification is not based alone on their I.Q.'s, or mental ages, but is arrived at through a study of both of these items plus such other information as actual scholarship ranking, attitude toward school, educational and social status of the home, probable educational and vocational future, exceptional advantages which parents are able to offer in the way of special instruction, and the number of hours of necessary activities outside of school. The classification of these pupils in the high school is carried on by a special committee of teachers trained for the work.

''To sum up, our program calls for (1) adjustment of the child and the grade in which he can do his best work, (2) acceleration during the early grades, and (3) classification and enrichment during the junior and senior high schools. Our program is exactly what the best principals and teachers have always done, but we are trying to do it more accurately through measurements rather than by guess work or individual judgments.''

It is quite evident that the most difficult aspects of the gifted child problem do not lie in the field of the formal organization of the school. Grade skipping, segregation, grouping within a class, sectioning according to ability within a grade are simple enough to manage. There is increasing agreement on the desirability of enriching the experience, rather than speeding the rate of the capable children through the all-too-meager offerings of the school years. The biggest question and the most difficult of solution is undoubtedly recognized as this: "How shall their superior powers be challenged, and how shall curricula and schoolroom procedure be modified to meet more fully the rightful demands of superior endowments?"

CHAPTER IV

SOME PHASES OF THE ADMINISTRATION OF THE EDUCATION OF GIFTED CHILDREN

Leon O. Smith
Assistant Superintendent of Schools, Omaha, Nebraska

Many of the studies relative to the education of gifted children made heretofore have dealt largely with the methods of selecting the children and the high records of such classes in certain standard tests. It is the purpose of this particular study to ascertain if possible what are some of the standard practices relative to such questions as—housing; equipment; qualifications, experience and salaries of teachers; cost of instruction; advantages and disadvantages of the idea; size of classes; and other points of administration.

Questionnaire

Shortly after the opening of schools in 1923 the following questionnaire was sent to approximately 130 selected cities and institutions in 31 states in the United States where there was a possibility or probability of something being done in a definite way toward the education of the gifted, or superior, child.

NATIONAL SOCIETY FOR THE STUDY OF EDUCATION
Twenty-third Yearbook Committee Study of Administration of Education of Superior or Gifted Children

Kindly fill in the following blanks as fully as possible and return at once to Leon O. Smith, Assistant Superintendent of City Schools, 602 City Hall, Omaha, Nebraska

1. Name of city or institution reporting..................................
2. Name and position of individual reporting..........................
3. Do you attempt to provide special instruction for superior or gifted children in elementary schools?..

In what grades?..
In junior high school?..
In senior high school?..

4. If you do not have such classes now, do you anticipate providing such classes in the near future?.......................................
5. Have you discontinued such classes after having established them?......
Reason? ....
6. If you have classes for the education of superior or gifted children do you provide:
   a. Special buildings? ....
   b. Rooms in regular elementary schools?..........................
   c. Rooms in regular high schools?................................
   d. Other means of housing?.......................................
7. How does the equipment in the way of desks, globes, maps, library, reference material, visual education, etc., differ in these classes from that of the regular classes?..
Do you have free textbooks in your schools?.........................
8. Teachers:
   a. What qualifications as to training, experience, travel, personality, etc., must teachers have to be placed in charge of these pupils?..........
   b. How many teachers are now doing this type of work?..............
   c. How are the teachers selected?..................................
   d. How much additional salary above that of regular teachers, if any, is given for this work?..
   e. Do your teachers advance from grade to grade with the class of pupils? ....
   If so, for how long?..
9. What is the pupil cost of special instruction as compared with regular instruction? (Pupil cost based on general control, instruction, operation, maintenance, auxiliary agencies, and miscellaneous expenses. Do not include capital outlay or debt service)..................................
10. Do you have a special department for administration, supervision and teaching of these classes?...
Name and position of person in charge?...............................
11. What are the typical objections in practice to the special education of superior or gifted children?
   a. On the part of parents? ....
   b. On the part of teachers? ....
   c. On the part of pupils? ....
   d. From the standpoint of administration?..........................
   e. Any other ground? ....
12. How can these objections be met successfully?........................
13. What is the attitude of high-school teachers toward these pupils when they enter the high school?..

14. Publicity:
    a. What publicity is given to your classes for superior children?.....
    b. What publicity is desirable? ....
    c. What publicity is undesirable? ....
15. What do you consider the best nomenclature for these classes (such as accelerated classes, speed classes, enrichment classes, rapid progress classes, X classes, Alpha classes, etc.)?............................
16. How does the length of the school day in these classes differ from that of the regular classes of the same grades?...........................
17. How are pupils transported to these classes?.........................
18. Who pays for the transportation?...................................
19. How is the lunch problem solved; cafeteria or do children bring lunches from home? ....
20. Number of pupils in each of these classes?..........................
21. Does this number differ intentionally from the number in the other classes of the same grades?..
    How much? ....
22. How does the program of studies differ from the regular program? Enclose a typical program..
23. Any additional information which you think would be of service in this study ....

The response to the questionnaire was most gratifying as far as numbers were concerned. Sixty-eight replies were received from various places in twenty-five states. Most of the replies received stated that nothing was being done beyond sectioning classes according to ability, and it is perhaps fair to assume that nearly all, if not all, of the cities which did not answer are doing nothing definite in this field. The tenor of the negative replies is indicated in the following quotation from one letter—"Your questionnaire concerning gifted children has been handed to me for reply. It is the easiest one I have had for a good many days because we have done nothing thus far in providing more and better school facilities for gifted children. We are doing an unusually large amount of special class work for subnormal, tubercular, deaf, and blind children, but thus far the genius has escaped us."

Summarized Replies

The responses to the questionnaire are here summarized. The paragraph number corresponds to the number of the question in the questionnaire just given.

3. A careful analysis of the data seems to indicate that fewer than 20 cities in the United States are doing definite work along the line indicated in the questionnaire.

4. Washington, D. C., and Allegan, Michigan, both report that they anticipate providing classes for gifted children in the near future.

5. Only four cities report a *discontinuance* of such classes after having established them. One reported jealousy among the principals as the reason. Another reported that it ''temporarily ran out of material.'' The third stated that an economy and retrenchment program made it necessary to discontinue a class. The fourth city did not indicate the reason.

6. All classes reported have been *housed* either in regular elementary-school buildings, regular high-school buildings, or as a part of the regular classroom in a few cases.

7. A majority of the cities report that the *equipment* in the classroom does not differ from that in the regular classes. Jackson. Michigan, has somewhat better equipment for the classes for gifted children. St. Paul, Minn., and Rochester, N. Y., report more reference material. Richmond, Virginia, reports movable desks and more books. A number of cities say they have no better equipment, but that the pupils make better use of the regular equipment.

8. It is evident that the most successful *teachers* in the school system are the only ones eligible to be placed in charge of these pupils. The following are a few quotations as to the qualifications required in the various cities: ''conspicuous success,'' ''initiative and originality,'' ''life certificate and at least two years' experience,'' ''must have vision,'' ''ten years' experience,'' ''eight years' experience,'' ''above average intelligence with strong personality,'' ''five years' exceptional experience.''

In the various cities from 1 to 30 teachers are reported to be doing this type of work, although it is probable that where the higher numbers are given the teachers mentioned are merely in charge of sections of brighter pupils.

In most cities an additional *salary* is given to teachers working with gifted, or superior, children. Richmond, Virginia, reports $200 a year additional. In Oak Park, Illinois, the maximum for these teachers is $200 higher than the regular maximum. Dayton, Ohio, pays these teachers $100 to $200 more a year. Jackson, Michigan, reports $50.00 a year additional and Detroit $200 a year additional above the regular salary.

Six cities report that their teachers *advance from grade to grade* with the class of pupils, while fourteen responded negatively. In St. Paul, Minn., and Rochester, N. Y., the teacher may be with the same class for two years, and in Oak Park for three years. In Richmond, Va., and St. Louis, the teacher remains with the class for one year. In Jackson, Michigan, the teacher may remain with the class as long as two years, and in Detroit, the teacher may remain until the eighth grade.

9. Interesting responses were given to the question concerning the *cost* of this special instruction as compared with that of regular instruction. Ten of the 18 cities report no difference in the cost. St. Paul, Minn., and Lawrence, Kansas, report bigger classes which keeps the cost down, and the Whittier School in Denver reports that the cost is one-half of the regular instruction because the pupils progress more rapidly. Everett, Mass., reports the cost "less in the long run," and Richmond, Va., is the only city which reports that the cost is greater. The report there indicates that the annual per capita cost is $10.00 greater than for regular instruction.

10. Jackson, Mich.; St. Paul, Minn.; Richmond, Va.; and Detroit, seem to be among the very few cities that have anything like a special *department for the administration and supervision* of this type of work.

11. Most of the cities report that there are no *objections* whatever to the special education of superior or gifted children as carried on at the present time. A few returns mention objections on the part of the parents, such as too long distance, cold lunches, "crowding the pupil," missing part of work, health, "undemocratic." One superintendent reported that there is no objection to the scheme if the pupils are left in the same building.

Only two objections seemed to be voiced on the part of teachers. One is that some teachers hate to lose their bright pupils, and the other, like unto the first, that "all the teachers want the 'super' pupils."

Most of the pupils seem to approve of the plan and raise no objections unless they reflect those expressed by their parents. In some cases the less gifted children are inclined to be jealous and once in a while the charge of favoritism is raised. However, it is fair to say that these objections may arise in any type of school organization and with any groups of children.

From the standpoint of the administrator, the chief difficulty, especially in smaller or more 'spread-out' cities, seems to be encountered in centralizing a sufficient number of these bright pupils to form a special class.

12. Since these objections depend a great deal upon local conditions, it is necessary to know local conditions in order to meet them successfully.

13. A very large majority of the responses on this point indicate that the *high-school teachers* have a most favorable attitude towards these gifted or superior children when they enter the high school. Two reports indicate that high-school teachers are sometimes over-critical; one superintendent puts it this way—"some object, as usual."

14. The consensus of opinion among the various superintendents reporting is that very little, if any, *publicity* should be given to classes for gifted children. The classes should be organized quietly and carried on with as little publicity and advertising as is possible.

15. Various *names* for these classes have been suggested. Five replies favor the name of "accelerated" or "enrichment" classes. Three voted for the name "Alpha" classes. Three preferred the terminology of "X" classes. There was one report for each of "rapid progress," "special promotion," and "superior scholarship" classes. One school official in answering this question said he was not particular what name the class bore so long as the name did not imply speed.

16. Practically without exception the *length of the school day* in these classes is the same as that of the regular classes in the same grade. In two or three cases the day is a half hour, or even an hour shorter than in the regular classes.

17. All cities reporting state that the *transportation* of pupils to these classes is taken care of by the parents, where the class is outside of the pupil's own district.

19. The pupils either bring their *lunches* from home or eat in the school cafeteria. Worcester, Massachusetts, reports one session from 8:30 in the morning until 1:00 in the afternoon.

20. The *number of pupils* in these classes ranges from 20 to 45. There is a tendency however, as has been indicated before, for the number to be larger than that of the regular class. Of the cities reporting, the median for classes of this type is 35 pupils.

22. The following are the *programs* used in two of the centers for gifted children in Detroit:

DETROIT PROGRAM

Grades

There were, in each of the three centers, four classes, B and A 7th and B and A 8th.

Teachers

Each center had two teachers, and they also received help from the regular school staff in music, art, manual training, domestic science, and sometimes in school subjects. The teachers were all rated as 'A' and they had the personality, experiences of travel and study needed for this type of class. They were resourceful, earnest, and stimulating. They received $200.00 a year above the regular salary.

Schedules

Since the children came from long distances and brought their lunches, they had a short noon hour and were dismissed an hour earlier than the other children. The following schedules give an idea of a day's program.

CENTER ONE

Hour	Time	I	II	III	IV
			Morning Sessions		
8:45	30				B7-B8 History A7 Latin, A8 Arith.
9:15	30	B7 Algebra	A7 Literature	B8 History	A8 Latin
9:45	30	B8 Algebra	A8 Latin	B7 English	A7 History
10:15	15		Recess		
10:30	30		Physical Training		
11:00	30	A8 Algebra	B7 Latin	A7 History	B8 Latin
11:30	30	A7 Algebra	B8 Latin	B7 History	A8 Civics
			Supervised Lunch Hour		

Special Classes

8:45	90	Tuesday	Household Arts, Manual Training A and B8
8:45	90	Thursday	Household Arts, Manual Training A and B7
8:45	45	Friday	Drawing A and B8
9:30	45	Friday	Drawing A and B7
8:45	25	Mon. & Tues.	Music

Afternoon Sessions

12:30	30	B8 Arithmetic	A8 Literature	A7 English	B7 Arithmetic
1:00	30	B7 Arithmetic	A7 Latin	A8 Civics	B8 Arithmetic
1:30	30	A8 Arithmetic	B7 Literature	B8 English	A7 Arithmetic
2:00	30	A7 Arithmetic	B8 Literature	A8 English	B7 Latin

Special Classes

1:00	45	Thursday	Drawing B and A8
1:45	45	Thursday	Drawing B and A7

This class had an extra teacher assigned by the school for recitation work

CENTER TWO

Morning Sessions

Hour	Time	I	II	III	IV
8:45	30	Algebra	Arithmetic		History
9:15	30	Latin	English	Mathematics	
9:45	30	English		Latin	Literature
10:15	15		Recess		
10:30	30		History	Algebra	English
11:30	30		General { Public Speaking—Monday, Wednesday Music—Tuesday, Thursday,		
11:30	30	Mathematics		Algebra	

Special Classes

10:15	90	Friday	Manual Training A and B8
11:00	45	Friday	Drawing B and A7

Afternoon Sessions

1:00	30	Civics	Algebra	English	
1:30	30		Physical Education		
2:00	30		Latin	History	Mathematics

Special Classes

1:00	90	Thursday	Manual Training A and B7
1:30	60	Friday	Drawing A and B8

This class had a part-time teacher assigned by the school to aid in class recitations

CHAPTER V

THE CURRICULUM FOR THE GIFTED: SOME PRINCIPLES AND AN ILLUSTRATION

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I. SOME GENERAL PRINCIPLES THAT SHOULD CONTROL CURRICULA FOR THE GIFTED

An examination of the replies to questionnaires sent to those who are making special efforts in the behalf of gifted children indicates the need of establishing some fundamental principles to guide makers of curricula for gifted children.

It is perhaps inevitable that those drawn into the work of discovering and classifying gifted pupils should have had unusual interest in psychology and mental tests. This is significant in view of the fact that the accepted point of view for curricula making is sociological. According to this point of view, the subject matter for any curriculum is to be found by analyzing the possible activities or situations which are characteristic of life outside the school. It is now recognized that there is a large 'minimum' list of objectives which must be required of all pupils above a certain level of intelligence without regard to whether pupils are below average, average, or superior.

It is clear, then, that the first step in making curricula for gifted children is to determine the most important life needs and to formulate these needs as objectives. In spelling, for example, the 5000 most important words for anyone to learn, whether he be gifted or otherwise, are the 5000 most frequently and commonly needed in writing. These words have been determined by careful investigations. If additional words are to be learned by those who are especially gifted, they must be chosen in order of importance, according to the data shown by these investigations. In a similar way, the most important problems in citizenship for anyone to learn are to be found by the analysis of the most pressing civic problems in life. A certain minimal number of these problems must be required of all.

Even in the field of aesthetic subjects it would seem that the common fundamental principles and common uses of an art, such as music, should determine the core of the course of study for the superior student as well as for the student of mediocre ability.

This does not in any way imply that differences in the capacity to learn do not constitute an administrative problem of the deepest significance. In fact, differences in ability to learn necessarily imply: first, differences in the amount of work done after minimal essentials have been mastered; second, differences in terms of quality of work, where differences in quality are relatively important in terms of social value; third, differences in rate of learning, and within rough limits, in actual grade progress; fourth, possible differences in the methods of learning in more complicated processes; fifth, differences in the skills and knowledges acquired incidentally, since incidental learning is undoubtedly greater in children of superior intelligence. To many, these differences point clearly to the need of segregating superior students.

It must be understood, however, that this portion of the *Yearbook* that deals with the curriculum does not presuppose a reclassification or segregation of pupils either on the basis of intelligence tests or upon any other basis. Neither does it suggest, except by implication, the factors which should enter into a reclassification; those problems are discussed elsewhere in the volume. Although the advantage of reclassification has not had adequate experimental proof, it seems probable that economy of effort is gained where reclassification is possible. In small systems it does not at present seem likely that the resources of the school are best used in segregating students. But, whether bright students are segregated or not, the problem of adjusting the curriculum to them remains the same, save for certain administrative differences. The problem remains the same, not only with respect to determining the general objectives to be attacked in each subject, but also with respect to determining the special detailed skills, attitudes, and knowledges which are essential to the mastery of each subject.

An examination of data on individual differences in rate and quality of accomplishment shows how complicated the problem of adjustment is. Even where pupils have been classified and segregated, the variations in amount and quality of work done is considerable. More than this, each student is variable in his own accomplishment, working somewhat in spurts. The problem, in adjusting curricula to gifted children, is to secure the maximal accomplishment in quantity and quality for each pupil at all times.

That great differences exist among pupils must be admitted by all. These differences may be variously accounted for. Many of them are, no doubt, traceable to differences in capacity; some are due to variations in interest; some are the result of training; some are accounted for by differences in methods of work. The statistical and experimental investigations of individual differences have produced data of great significance. Yet these data, to be most useful, must be examined in the light of the ultimate purposes of education, both as applied to the good of the community to which education should contribute and to the fullest development of the individual students who are to make this contribution.

A full discussion of all the problems involved in the achievement of these ultimate purposes is impossible in the space allotted to this section of the report. Many of the problems are discussed in other chapters. Here there will be presented four important principles which should be considered in making and in teaching the course of study for gifted pupils.

(1) *The interests of the public at large are best served by developing in the elementary school and the junior high school a community of interests.* This is the principle which in sociology has long gone under the term "social like-mindedness." It has been explicitly urged, among educators, by W. C. Bagley, and implied by all the investigators who have attempted to establish school objectives through the analysis of social needs and opportunities. In its narrowest form it argues for minimal essentials for all. In its broader form it suggests that possibly, even after minimal essentials have been learned by superior students, the general policy should be to have the remaining time of the student devoted, not to the achievement of different objectives, but to the more elaborate

study of the minimal objectives. This principle applies most fully to subjects like hygiene, science, geography, history, civics, and aesthetic subjects; to a considerable degree to reading and arithmetic; and to a lesser degree to subjects like spelling and handwriting.

(2) *The bright student, as well as society at large, gains most when problems are attacked on deeper levels and by more elaborate methods than are possible with mediocre students.* In a sense this is an implication of the first principle. Variations in the ability to use more subtle attacks and gain more profound insights constitute the most significant differences in intelligence among people. The best interests of the student are not served by giving him more extensive tasks on the level of average and dull students. His interests are best served by attacking problems with all the thoroughness and all the vision of which he is capable. Where the duller student merely memorizes or is limited to rather obvious reasoning, the bright student not only achieves the learning of the facts but also delves into the principles underlying the facts and into the inferences to be derived from them. Such a plan not only commands the student's respect for school work, but trains the very type of ability through which he should make his distinctive contribution in future life. This second principle, like the first, applies more fully to content and aesthetic subjects than to subjects which deal more especially with rather mechanical skills.

(3) *Curricula adjustments should be made on the basis of school accomplishment rather than on the basis of intelligence scores.* This means that a pupil must qualify for work on a superior level by first doing the work on a level below rather than by making a superior score on some test of native capacity. There are three important reasons for adopting this principle.

(a) *It squares with the ideals and purposes of American democracy.* The American public is convinced of the sound policy of rewarding achievement rather than native endowment or superior opportunity. It admits that the man or woman of superior talent or opportunity can achieve in a superior way, but it insists that no credit is due and no further opportunity deserved until the achievement has actually been made. It especially exalts those who succeed in the face of what seem to be impossible barriers of poor physical endowment, inferior mental resources, or untoward circumstance.

There may be in this attitude of the public much idealism and even something of romance, but the most cold-blooded appraisal of its effect on the individual must convince one that it operates in a wholesome way. Even if the American public did not have this attitude, one of the first aims of statesmen in and out of schools should be to develop it.

These facts have clear implications for those who wish to gain public support in making adjustments for the benefit of gifted children. The public may be counted upon to support any plan which gives additional opportunity to those who show through accomplishment that they deserve and will profit from it. They cannot be counted upon to support a plan which will extend these special opportunities to those who have such real or supposed talents as are displayed only by tests of native ability. This does not mean that intelligence tests are to be thrown into discard. They are invaluable as one measure of the degree to which the school has stimulated or taught the student to achieve to capacity. Patrons may be lead to co-operate to the end that students do achieve on the highest level of which they are capable. The criteria, however, which will be in the minds of these patrons for demanding opportunity for pupils or for justifying the withdrawal of special opportunities will be not native capacity but actual achievement.

(b) *Such a plan is most wholesome for the student.* For example, he sees the justice of being freed from a spelling assignment of any length because he has learned the words, rather than because he may happen to have superior intelligence or a knack for spelling. He sees the fairness of being given or refused the privilege of doing more intellectual and interesting tasks in social sciences because he has learned or not learned the minimal part of the lesson rather than because he has a high intelligence score. He prospers better, not only in his scholarly development but also in the development of right attitudes toward work, because of this emphasis upon performance. Snobbishness is much less likely to develop in those who are classified on this basis of achievement than in those who are classified on the basis of native capacity.

(c) *Such a plan begets good teaching.* It emphasizes the fact that it is the teacher's business to secure satisfactory accomplishment. It is true that the teacher needs intelligence scores as an aid to help her judge whether or not the child is achieving to capacity. She will realize, however, that in the case of any given child the relation between his intelligence scores and his ability to achieve in a given subject, is by no means perfect. She will therefore put her first efforts upon the diagnosis of obstacles in the way of achievement and upon the removal of these obstacles through remedial teaching.

(4) *High standards should be set for bright students in tasks that are of a drill, memory, or routine nature.* It will be seen elsewhere in this *Yearbook* that the correlation between a high intelligence score and ability in spelling, in handwriting, or in arithmetic, is low. This is especially noticeable in the case of handwriting. How should these low correlations, describing present status, be interpreted? One may say that there is little reason to assume that children of superior mental ability should be superior in these three subjects. One is led to suspect, however, that these correlations would be somewhat higher if bright students were as interested, patient, and untiring in their efforts to learn these subjects as are those of less intelligence.

Now the ability to spell is of substantial social value. The same may be said for the ability to write and the ability to compute. These values should be strongly emphasized in teaching bright students. One cannot too much stress with bright students the importance of establishing a determination to achieve creditably in these subjects, even at the cost of a large amount of painstaking practice or study. In fact, it is especially valuable for these students to generalize the ideal that one should always do any important task in a painstaking manner.

The establishment of high standards is similarly needed to secure the review and memorizing which are essential to accurate grasp of the fundamentals in a subject which involves insight and problem-solving ability. The child of high general intelligence is likely to gain insights and to solve problems more quickly than the child of lower intelligence. Because of this, and because of a superior command of language, the expenditure of a small amount of effort often enables the bright, but less conscientious student to pass the rather superficial inspection which the teacher gives through questioning in class recitations. Slovenly work is thus encouraged. Even when a gifted student has a real initial interest in a problem, he may fail to do the careful work which is necessary to the accurate grasp of the problem, and stop short of exercising the techniques which are necessary to remembering the essentials.

Either in the case of careful motivated drill necessary to the mastery of the three R's, or in the case of the hard work necessary to the mastery and remembrance of content subjects, the bright student should be held to especially high standards. He must be protected against the inconstancy of purpose and the complacent superficiality which comes from being permitted to move to new tasks without thoroughly finishing the job at hand.

These four principles have been consciously formulated to meet definite needs which have impressed me, not only as a result of reading the answers to the questionnaires which were returned to the chairman of our Committee, but also as a result of the study at first hand of attempts to make adjustments to gifted students. No matter what administrative plan is adopted in a school system for making such adjustments, these principles should, in my judgment, be taken into account.

II. METHODS OF INSTRUCTION WHICH BENEFIT THOSE WHO HAVE UNUSUAL SPELLING ABILITY

The low correlation between intelligence scores and spelling ability would seem to indicate that if children are grouped according to intelligence scores, the problem of adjustment in the gifted section will be about the same as in an average group or even in a below-average group. Actual experiment confirms this indication. In each group the variation in ability to spell will be very great and in each group the students who have unusual ability to learn to spell will constitute the problem with which this chapter is concerned.

One of the most significant steps which has been taken as a result of the scientific study of differences in spelling ability has been to individualize the teaching of this subject, in so far as it is administratively practicable to do so. There are two questions which must be answered concerning the individualizing of the instruction in spelling. First, how may individual differences be best taken into account in learning the minimal essentials in spelling? Second, what should the students do who have mastered these essentials?

Consider first the problem of making adjustments to gifted pupils in learning the minimal essentials. The modern tendency is to include about 4000 words in the minimal list to be learned. Some textbooks also include rules, word study, and phonetic analysis among the minimal essentials. However, the one essential upon which all modern texts agree is that there must be a minimal list of the words most commonly used in writing. For learning these words, about seventy-five minutes a week—fifteen minutes a day—are set aside in the school program. What adjustments, in learning this list, are to be made to the pupil who has unusual spelling ability?

TWO PLANS FOR INDIVIDUALIZING INSTRUCTION IN SPELLING

The only successful plans for making adjustments involve radical changes in classroom procedure. The writer has seen two types of procedure in successful operation. In the first type each pupil advances through a term's work in spelling at his own rate and is independent of the rate of progress of any other pupil. This is a thorough-going plan of individual instruction. One form of this plan is apparently working satisfactorily in Winnetka, Illinois, under the direction of Superintendent Washburne.[1]

In the second plan, devised by the writer, a class is held more nearly together by assigning the same list of words to be mastered in a given unit of time, but with care to provide, in a manner described later in this article, for individual differences in initial knowledge and in ability to learn the list. Each plan has its administrative difficulties and its advantages, but the second plan is at present more feasible since it involves less change from the class organization to which the teacher is accustomed. The most practical unit of time seems to be a week, although a unit of a month has been used with some success.

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[1] This plan is described in the *Elem. Sch. Jour.*, Vol. XXIII, pp. 751-762.

Either of these plans, to be most successful in individualizing instruction must include three provisions: first, each child before studying an assignment either for the first time or in review, must be tested over it in order that he may discover the words he needs to study; second, the size of the unit which constitutes an assignment must be larger than is usually assigned in one period; and third, each child must be taught an efficient method of learning to spell and a right attitude toward hard work. The advantages of each of these provisions are easily demonstrated.

1. *Testing to guide study.* By identifying the words which the child needs to study, the preliminary test renders three services. First, it saves the time which would be spent upon words which the child already knows. As spelling is commonly graded, a child of average spelling ability will already know at least half of the words in a new assignment as the result of incidental learning. The gifted speller will know at least ninety percent of these words. The saving is here so obvious that it needs no further explanation. Second, this preliminary test, by indicating the words which the child needs to study affords a sound basis for motivating the study of these words. There is no question but what the child's attitude toward a word that he has missed is more aggressive than toward any random word which happens to be in the spelling list for his grade. Tests repeated after an opportunity has been given to study, operate not only to show him what words, if any, still need to be studied, but also to give him an accurate measure of the amount of progress which he has made. Thus, on the one hand, the careful student is rewarded, and on the other hand, the careless student is confronted with the inevitable results of poor work. The child is told frankly that these repeated tests are necessary to indicate the success with which he has worked, as well as to afford the opportunity for recall and learning after an interval. The facts made plain to the child

by his own scores on these repeated tests demonstrate to him one of the most useful and fundamental of all the techniques of learning—namely, that repeated recall is essential to permanent retention. There is reason to believe that the rigor involved in this procedure gives a fundamental training likely to be neglected in teaching children above the average in general intelligence. Third, the preliminary test tends to remove that curse of all instruction—mere routine study. Anyone who has experimented with teaching a list of words to a group of children working as a unit has been struck with the small amount learned by some of the students who apparently went through all the motions of study. It is aggressive focalized study that counts.

Both at Winnetka and in the plan devised by the writer, the preliminary test has been found to be indispensable to successful achievement.

2. *Increasing the size of the assignment.* It is impossible to make a practical working adjustment to pupils of varied spelling ability unless the assignment is of considerable length. This does not mean that a day's assignment must be long. It means that the assignment should cover a considerable period of time. The spelling assignment should rarely, if ever, be for a day. Probably the most efficient plan based on a day's assignment is that devised by Wallin and described in his "Spelling Efficiency in Relation to Age, Grade and Sex, and the Question of Transfer." Briefly, this method provided for teaching all pupils in a class two new and eight review words each day. Direct experiment showed that this method was more efficient than other day-by-day methods recommended in the textbooks which were in use at the time this method was first recommended. And yet a detailed examination of the records made by individual pupils in these experiments showed: first, that the time of the good speller was largely wasted through having to study words which he already knew how to spell; and second, that for some reason many pupils made little progress.

The smallest assignment which is practicable is a week's work. If 4000 words are to be learned in the elementary school, this means, in the primary grades, from ten to twenty words a week. In the more advanced grades and in the high school it means twenty or more words a week. The following method of administrating this larger assignment is based upon the principle of a preliminary test followed by the study of words missed on that test. Many modern textbooks recommend this method. It can be used with any book or list of words.

The preliminary test, given on the first day of the week shows each pupil his exact job for the week. Students who miss no words in a test have no reason or motive for studying the spelling of these words and are therefore excused from doing so. On Wednesday all children should take a test over the assignment in order to show those pupils who have missed words what progress they have made, and in order to make certain to other pupils that their first correct spellings were not accidental. There is seldom a difficult assignment in which at least one pupil does not miss in the second test some word which he spelled correctly in the preliminary test. The study period following upon this test is again adjusted to the needs of the individual. The final test gives the measure of success for the week's work and sets the special tasks for those who have not perfected the learning of all words assigned for the week.

Some provision for review tests and for the re-learning of words missed on this test must be made. One way of doing this which is easy to administer is to give the test on Wednesday over a list which has been taught some weeks before. The test should be followed by a study period on Thursday and a final test on Friday. For administrative reasons the writer has chosen a month as the time which should elapse between the first week's learning on a list of words, and the review. Whether the interval be one month, two months, two weeks, or any other period of time, the principle is the same. Certainly, review is needed. It should be adjusted, of course, at all times to the individual needs of the members of a class.

A week's assignment involves some waste of the time of children of unusual spelling ability. It has the advantage, however, of being relatively easy to administer, and the further advantage of not discouraging the poor speller (who is often above average in intelligence) by confronting him at one time with a very large number of words which he cannot spell. A careful study of a month's assignment or a term's assignment as a unit shows clearly that, if pupils are not to be discouraged and if they are to have an easy means of marking progress, the whole list of words must be broken up into smaller units. This may be done by dividing the list, regardless of whether or not the word has been misspelled, or by making each child's units on the basis of words which he actually has missed in the preliminary tests. A convenient unit is ten misspelled words. This is the unit used at Winnetka.

With trained teachers, working under supervisors who understand the administrative difficulties involved in individual instruction, and with materials especially adapted to the method, it is possible to use a term's work as a unit, allowing each pupil to progress as rapidly as he can. With a term's assignment, the teacher must be particularly careful to provide re-tests essential for delayed recall, as well as to separate the units of work in such a fashion that the child will not be discouraged by the size of the task ahead of him. There is a very great advantage in dividing the work so that the child gets at intervals the satisfaction of having completed a unit of work. This is amply provided for in the Winnetka plan.

Whether the unit of assignment be a week, a month, a term, or the entire word list, the teacher is confronted with the problem of what to do with the child who has completed his assignment. This problem will be discussed later in this article under the heading: "Possible types of adjustments to students who have completed their assignment."

3. *Learning how to study spelling.* One of the first adjustments to be made in individualizing instruction in spelling is to teach the child how to learn to spell a word. This makes him independent of the teacher or of his class. The method given in the *Eighteenth Yearbook,* Part II, Ch. III, exemplifies an attempt to formulate such a study procedure by basing it upon experimental evidence and by testing it out under the conditions of classroom instruction. It is interesting to note that, although spelling has had the benefits of an experimental attack over a period of many years,

there is still no evidence to show that students above the average in general intelligence should have, in spelling, a method of study particularly adapted to them, though there is some evidence to show that students who learn to spell easily may shorten the procedure which is necessary to thorough learning on the part of less gifted students.

Children who are above the average in mental ability, whether they are superior in spelling or not, may be interested in increasing the efficiency of their methods of studying spelling. Because of the great amount of research which has been done in determining the most efficient methods of learning to spell, we can now propose to these pupils a method which, with reasonable industry upon the part of the pupil, will guarantee a satisfactory accomplishment. A fair amount of interest in methods of work may be regarded as a minimal essential in spelling. A keen interest in doing one's work with the maximal efficiency and an inquiry into the principles involved in efficient study constitute a substantial enrichment of the course of study.

In a similar way, he will be interested in the research by which a practical word list has been made possible. The pupil's attitude toward the word list is changed when he realizes the scientific care with which the list has been made. Some insight into the nature of this research can be gotten by having the pupil analyze a letter or two, tabulating the frequencies of the words. After such an analysis, the statement that five million running words of correspondence have been tabulated, impresses the child with the significance of a word list which has been selected with such care.

Possible Types of Adjustment to Students Who Have Completed Their Assignments in Spelling

1. *Should the student of superior ability in spelling, who has finished his assignment, anticipate the advanced work of his own or even of succeeding grades?* In the "Winnetka Plan" the pupil anticipates the advance assignments for the remainder of the term only. In such a plan the entire word list for the term may be regarded as one large task, even though the list is divided by advising the student to study, in units of ten, the words which he has missed

on the preliminary test. Each student proceeds to learn this list as rapidly as he can. The students help each other in giving out words which have been missed on preliminary or other tests. The teacher takes up and corrects these test papers each week. The plan involves many difficulties of administration, and should not be undertaken except under the guidance of some one who understands how to overcome these difficulties. In the case of classes where the unit of assignment is a week or a month, the anticipation of advanced work also involves practical difficulties in administration, since, as at Winnetka, pupils must work in pairs in order to pronounce the words to each other in tests and to assist in correcting papers. Any student who is interested in anticipating advance assignments will find his spelling slightly improved through the additional review he gets at the time the advanced work is reached by the rest of his class. Since he is a superior speller, the additional review is little needed and is, for the most part, a waste of time. It seems probable that anticipation is not a solution of the problem of adjusting the course of study in spelling to the student of unusual spelling ability, unless some such plan as that worked out at Winnetka is used. Those who adopt this plan should keep in mind that Superintendent Washburne advises against allowing the students to anticipate the work of more advanced classes, because of the administrative difficulties involved in such a plan. This advice is undoubtedly sound.

2. *After thoroughly learning the four or five thousand words which are now regarded as a fundamental list, should a student learn words less frequently used?* It may be that the pupil who is gifted in spelling can learn ten thousand words to perfection. This additional task is not at all the same as doing more addition problems after the pupil has developed satisfactory ability in addition. Even the average individual needs to know how to spell more than four thousand words, and yet four thousand words make up 98.7 percent of all the running words that have been found in correspondence. The following table furnishes the basic information which is needed in considering the feasibility of expanding the word list for pupils of unusual spelling ability. It is based on the data found in the analysis of approximately 1,000,000 running words of

correspondence. It should be read as follows: 100 words, with their repetitions, make up 58.83 percent of the words one needs in writing, etc.

Different Words in Order of Frequency	Percentage of Total Running Words Tabulated
100	58.83
500	82.05
1000	89.61
1500	93.24
2000	95.38
2500	96.76
3000	97.66
3500	98.30
4000	98.73
4500	99.00
5000	99.20
5500	99.33
6000	99.46
6500	99.53

These percentages will be decreased very slightly in a table made from similar data from the 5,000,000 running words which have now been tabulated. It will be seen that, after 1000 words have been learned, each additional 1000 words learned adds but a fraction of a percent of the running words which the student will need, and that the size of this fraction necessarily decreases very rapidly with each succeeding thousand. The law of diminishing returns operates so strongly in the study of words beyond the fourth or fifth thousand that it seems best to leave the spelling of these less useful words to such incidental learning as comes from the correction of spelling errors in the papers written in connection with other subjects. In case the fifth thousand most useful words are taught, they should be marked plainly as a "supplementary list."

3. *Should the capable speller spend his time upon definitions, roots, prefixes, and suffixes?* This, of course, means dictionary work and gives an accurate control of a fundamental vocabulary which is very much worth while. If the word list which a child is studying has been properly graded, he should know at least one common meaning for each word in his assignment. This knowledge stops far short, however, of the much more perfect control which would

be obtained through this dictionary study. The study of definitions, roots, prefixes, and suffixes is a valuable enrichment of the course of study in spelling and is administratively feasible.

4. *Should the capable speller learn the pronunciation keys?* An accurate understanding of these symbols constitutes an essential skill of permanent value and is certainly feasible as a means of enriching the course of study in spelling. Since accurate pronunciation is an important factor in learning to spell, the better use of the dictionary, which is made possible by an understanding of the pronunciation symbols, should cause some improvement in spelling ability.

5. *Should the capable speller be released from the study of spelling altogether so that he may undertake the preparation of assignments in other studies in which he is interested, or less proficient?* This is entirely feasible if the pupil is carefully supervised so that the time so liberated is profitably used. Where the unit of assignment is a term, as in Winnetka, this adjustment can be made with greater administrative ease, since all the free time comes at the end of the term. On the other hand, there is a value in the satisfaction which comes to the student, who, as a result of learning his week's assignment has, periodically, free time to devote to other interesting or necessary tasks. Teachers find this free time, distributed throughout the term, very useful in assigning remedial work to students who are deficient in some other subject. It is better to give such remedial work when it is needed rather than to delay it until the end of the term.

This is probably the best adjustment to make in the case of students who have completed their assignments. If a student so released from the spelling period does not need remedial work in other subjects, his time will probably be best used in dictionary study, in the learning of pronunciation keys, or in perfecting his methods of work.

Conclusion

Either the plan worked out by Superintendent Washburne at Winnetka or the plan devised by the writer may be adopted as the basis for making adjustments to pupils of unusual spelling ability.

Both plans are based on experimental research and have proved their worth in public school systems. The two plans are very similar in the following respects:

1. Both use a scientifically determined word list. The basis used for making up the Winnetka list is not quite the same as that used by the writer, but the first 2000 words in the one list are practically identical with the first 2000 words in the other list.
2. Both use a preliminary test, dictated by the teacher, to show each pupil what words he needs to study.
3. Both enlarge the unit of assignment.
4. Both excuse any student who has learned his assignment from further study of that task, except to correct errors made in future review tests.
5. Both use a rigorous plan of testing to show each pupil whether or not he has learned his assignment.
6. Both provide for a substantial amount of review.
7. Both plans put considerable responsibility on pupils in correcting tests during the first week of learning, but require the teacher to check up on these corrections each week.
8. Both plans provide a definite method of learning to spell.

It is significant that two investigators, working for the most part independently, should arrive at solutions so nearly identical in principle and so similar in practice.

The chief differences between the two plans are:

1. In the Winnetka plan each pupil progresses through the term's work as fast as he learns the words, while in the writer's plan the class is held together by assigning a definite list of words to be learned by all during each week.
2. In the Winnetka plan the free time of the child who has completed his work all comes at the end of the term, while in the writer's plan his free time comes with the completion of the assignment each week.
3. The writer's plan is somewhat simpler to administer, not only because it is more similar to the classroom procedure to which the teacher is accustomed, but also because it eliminates a large amount of the pupil assistance required in the Winnetka plan.

CHAPTER VI

THE CURRICULUM FOR GIFTED CHILDREN

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INTRODUCTION

It is probable that there are close to 500,000 boys and girls in our elementary schools whose *verbal intelligence* as measured by a Binet I.Q. is above 125. It is also very probable that there are a half million more of like intelligences in our high schools. Altogether American public schools are now responsible for the training of upwards of one million children of distinctive mental ability.[1] As the materials of instruction are now constituted, most of these children either have skipped or can skip a grade—some of them two or even three grades. Such children have been so conspicuous in the processes of the conventional school that they have come to be called "gifted." They have such "abstract intelligence"—that is, such ability to manipulate ideas expressed in words—that they graduate from the high school at the age of 15 or 16. With their unusual verbal mental ability they take school and college honors. They tend toward academic occupations, at least towards occupations demanding analytical ability. Many will teach in school or college.

Some of these verbally-intelligent thousands in our schools—perhaps between a third and a half (I personally subscribe to the smaller proportion)—are not only "gifted" in verbal intelligence—they possess distinctive social qualities also. These belong to another army of "gifted" persons for whom the school is responsible—our *socially* talented. These *socially* gifted pupils are now the "leading citizens" of a school or college; it is probable that later in life they will also be the "leading citizens" of some community, small or large. In school they are now the managers of teams, the presidents of classes, clubs, literary or debating societies. As adults later some will become the mayors of towns, the governors of states, executives in business, presidents of chambers of commerce, organizers of Rotary and Kiwanis clubs.

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[1] I trust that those who read this chapter will have the goodness not to raise any issues of "democracy." Please keep in mind that we are discussing only *one* problem—*what* shall we teach our gifted children? Whether it is the proper function of schools in a democracy to segregate gifted children and to organize separate curricula for them is not being debated.

Just how much these two legions of gifted people—the verbally intelligent and the socially intelligent—overlap we cannot now say. I incline to the view that the correlation between the gross ability "to get along with people" and the gross ability "to manipulate verbally-stated ideas" is low; that is, that many verbally gifted are socially mediocre or socially retarded, and *vice versa.* For our present discussion, however, it is not necessary to know; our immediate concern is to recognize that we have an obligation to a large body of pupils in our schools who are "gifted"—some in verbal intelligence, some in social qualities, some in both.

But there are types of gifted persons other than these two. We must not forget the mechanically gifted nor the esthetically gifted. It cannot be doubted that there are in our schools upwards of a million children who are talented in these two general directions. An interest in mechanical manipulation coupled to mathematical and scientific ability will make out of some of the "mechanically gifted" the Steinmetzes, Marconis, Langleys, Howes, Goodyears, Bells, Morses, Edisons of the next generation. Some of these will invent methods of research, others will assemble facts in new ways and deduce original generalizations, thus adding to the sum total of technical and scientific knowledge. Some will engage in research in medicine or physics, while others will direct laboratories and institutes managing men in addition to managing ideas.

Talent, however, has most frequently been thought of in connection with the esthetic or appreciational activities—music, dancing, painting and sculpture, writing. People are gifted in their ability to appreciate and to perform in these directions as well as in the other three we have mentioned. We are not so confident about the distribution of esthetic abilities as we are of verbal intelligence—measurements are inadequate as yet. The few measurements that we have in music—Professor Seashore's for example—teach us that differences between people in the fundamental musical abilities are far greater than are general physical or mental differences. There is good reason for believing that that is also true of dancing, drawing, painting, and perhaps to a lesser extent of writing. So, whether we have one thousand, one hundred thousand or one million esthetically "gifted" young people in our schools, one fact is clear—these young people will be the makers of the American culture of the next generation. Whether America becomes a true interpreter of art in a growing materialistic and mechanical world—whether she raises the level of culture from where Europe in her present *impasse* and sharp decline has dropped it, will depend very much indeed on these "gifted" boys and girls.

The four chief divisions of our army of gifted youth are now arrayed before us: the verbally intelligent, the socially intelligent, the mechanically intelligent, the esthetically intelligent.

Two facts stand out from this introduction. First: we must broaden our notion of talent, of "giftedness," to include many aspects of culture, for the school is responsible for the development of all the abilities in a child. Second: the number of children of conspicuous ability in our schools is probably large. Whether it is one million or ten thousand will depend on one's definition of "giftedness." Certainly, the "gifted" themselves are graduated in ability down from levels of true genius—shall we say one in a million—to those of conspicuous ability or talent—shall we say one or even more in a hundred?

ARE PUBLIC SCHOOLS ORGANIZING CLASSES FOR TRULY GIFTED CHILDREN?

As public school classes for "gifted" children are now organized they include much lower levels of ability than even "talent." Such classes are composed of pupils who range in I.Q. from 110 or 115 to 140 or more. Hence these classes merely are the better third of our pupils. So far as the Society's Committee has been able to discover there are very few separate classes for children of I.Q.'s of, say, 135 and above. There are a few striking exceptions, but they 'prove' the general rule. Two such classes have been organized in the New York City schools for the purpose of controlled experimental investigation.[2] One is a class of pupils of I.Q. of 155 and above and the other of I.Q. of 135 to 154 inclusive. These pupils therefore are conspicuously "gifted" children. Within such laboratory schools as the Lincoln School and the Horace Mann School of Teachers College and the laboratory schools of the University of Chicago there are undoubtedly sections of classes whose average I.Q. will run above 120. On the western coast such classes have been organized by Professor Terman. In Cleveland, Ohio, a few classes with minimum I.Q. of 120 have been organized under the leadership of Assistant Superintendent Bixby. These classes, however, are distinct exceptions to the rule. The very extensive correspondence of Dr. Whipple and the committee has revealed almost no classes in public school systems. In our subsequent discussion of what the country is doing for the gifted child we should bear in mind, therefore, that classes for gifted children as now organized are really classes for the best third, fourth or fifth of the pupils found in the respective classes and subjects. These pupils are therefore only the *relatively superior*—not the exceptionally rare or gifted.

CLASSES FOR SUPERIOR CHILDREN ARE ORGANIZED ON A BASIS OF VERBAL INTELLIGENCE ALONE

Furthermore, from the other sections of the *Yearbook* one can find evidence to support the statement that the formation of ability groups in public schools is essentially on the basis of measures of *verbal intelligence* alone. It may be that ability groups are now being formed on the basis of mechanical, social, and esthetic aptitudes. Our search has not revealed them. Instead, the general practice is to base what is done for superior pupils on their probable verbal intelligence. For example: ninth-grade classes in algebra or in English are sectioned by means of verbal intelligence tests and teachers' judgments of mental ability. Children who show marked proficiency in arithmetic, reading, history, geography, etc., (all verbal activities of the school) are permitted to take like work in a grade higher, occasionally in classes two grades higher. Pupils having finished given units of work are permitted to do more examples and more difficult ones in arithmetic, algebra, and geometry, to read more extensively in history, literature, and the social sciences, and to do more experiments in science. In all our correspondence there is almost no reference to the formation of groups on the basis of esthetic intelligence, of superior mechanical ability, of leadership or of other social traits. There are a few striking exceptions to the rule to which I shall refer. In the main, it is clear that the instruction of the superior young people in our schools is organized on the basis of verbal mental ability and is designed to give training in verbal skills and activities. Keeping this in mind, we are ready to consider in what the instruction consists.

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[2] Financed by a grant from the Commonwealth Fund and conducted by Professor L. S. Hollingworth, Miss Margaret V. Cobb, Dr. Jacob S. Orleans and others. See reports in Section II.

WHAT MATERIALS OF INSTRUCTION ARE PUBLIC SCHOOLS NOW PROVIDING FOR BETTER-THAN-AVERAGE PUPILS?

By correspondence with school people in all parts of the country the members of this Committee have collected data with which to answer this question. The officials of more than one hundred cities have described their provisions for superior pupils; about fifteen have supplied detailed exhibits which illustrate subject matter and methods of teaching. It is possible, therefore, to present a fairly clear picture of the current situation.

Two things are done for children who are better-than-average in our public schools: they are either promoted more rapidly or they are given a course of study generally referred to as "enriched."

A. The Conventional Method of Providing for Superior Pupils: To Advance Them Rapidly

This is the conventional American method, because it is easy, it is inexpensive, and it can be done under the administrative handicaps of our present system. Since the beginning of 'graded' schools, rapid promotion, or 'grade skipping,' has been practiced. It is the administrator's practical solution for a very knotty problem—that of providing individual and group activities for exceptional children. It is frankly regarded by all as a make-shift, not as a real solution for the problem.

It is based, of course, on the assumption that all pupils should study one curriculum; that, once having completed any given year's increment of that curriculum, they should proceed at once to the next. And that, in turn, presupposes that one curriculum can be constructed and has been constructed which will give pupils of widely varying interests and aptitudes opportunities for complete development. Of course, this is a patent fallacy.

The acceleration of superior pupils takes many forms. In Everett, Massachusetts, it is based on a 'credit for quality' scheme. Pupils receive additional credits for a high quality of work and are permitted to finish four years of high-school work in three years. In Meriden, Connecticut, acceleration is practised in the high school and the standard four-year curriculum is disposed of by the brighter pupils in three and a half, occasionally even in three years.

It is not only in the high school that rapid promotion is resorted to. In Louisville, Kentucky, the fourth, fifth, and sixth grades are completed in two years by superior children and in the seventh and eighth grades high-school credits can be accumulated in order to complete the academic curriculum more rapidly. Plainfield, New Jersey, recognizes bright pupils by letting occasional ones do the work of the fourth and fifth grades in one year. In Baltimore three semesters' work is sometimes accomplished in a year. In Boston particular schools equal Baltimore's record. Denver reports that the curriculum of two semesters is regularly completed by these superior pupils in one semester. Seattle, although skeptical of the wisdom of rapid promotion, reports that its experiments are convincing that the brighter children can do the work in half the time which the rank and file require. In Mobile, Alabama, the school system operates a summer session. By hard work in this summer school it is possible (as shown by the fact that boys and girls do it) to skip an entire grade. In Denver nine and one-half weeks of advanced work enable a pupil to 'skip' half a grade.

Of course 'grade skipping' is not a recent invention of reformers interested in gifted children. It has been a stock device of school administrators burdened with overcrowded rooms for two generations. Many teachers and officers managing our schools to-day were themselves among those who 'missed' sixth-grade geography and grammar, or the first half of American history in the seventh grade owing to grade skipping.

There's no doubt about it. The experience of school men is convincing of the fact that 'X,' or 'rapid,' or 'fast moving' classes —the better third, say, of our pupils—complete the standard conventional curriculum in half the time which has been allotted to it. If more evidence is needed, one has only to quote from our files— Everett, Washington; Kansas City, Kansas; Cicero, Illinois; Richmond, Indiana; Montclair, New Jersey; St. Louis, Missouri; Newark, New Jersey; Grand Rapids, Michigan—these and many more report actual experiences and convictions. Some have accelerated pupils in the middle grades of the elementary school; others have found that they gain time in the senior high school; still others report a similar condition for the seventh, eighth, and ninth grades.

What is the total situation then? What proportion of our schools are taking care of exceptional pupils by 'accelerating' them? It is difficult to generalize from our samples of the country's practices. A hundred school systems is a small fraction of the American schools—yet our hundred are representative of various parts of the country and their practices probably reflect pretty well the drift of things. If we were pressed for a statistical set-up of the current situation, we would say: about three-fifths of our schools now provide for superior pupils by rapid promotion. Approximately one-fourth hold them within the grade normal for their ages and 'enrich' the curriculum; the remaining sixth try to combine the two methods.

Let there be no mistaken ideas about one phase of the situation, however: not all of those who have tried 'acceleration' approve of it or now continue it. Some are emphatic in their disapproval of the plan. From Richmond, Indiana, comes the report that acceleration has been practiced for superior pupils for the past three years. During that time successive classes did complete three years' work in one and a half years. Yet the plan is being discarded and strenuous efforts are being made to 'enrich' the curriculum sufficiently to engage properly the interests and abilities of the superior pupils.

Seattle, Washington, also tried rapid promotion for exceptional pupils and found it wanting. It led to a saving of time, but the officials believed that superior ability merited a course better fitted to the abilities of these gifted pupils.

What Kind of a Curriculum Does Rapid Promotion Imply for Superior Pupils?

Let us make no mistake about the matter. Rapid promotion merely means that pupils of unusual verbal intelligence are permitted to do the work of a thoroughly verbalistic curriculum in fewer years than normal, or 'average,' pupils require. It implies that they study the same geographies in the fourth to seventh grades; that they get their control of arithmetical processes by going through the same steps of development in the same "three books;" that they manipulate equations and prove theorems from the stock courses in algebra and geometry—only they do all this in less time. That is, rapid promotion does not imply that the standard curriculum has been modified to fit the superior abilities of these children.

It is no doubt possible for the better third of our pupils to master the present eight-grade elementary curriculum in five years. The best tenth could do it in three school years, starting at, say, the age of seven. Whether they should be permitted to is seriously open to question. That we shall discuss later.

Accelerated Pupils Are Frequently Permitted to Elect Subjects of Higher Grades

Another make-shift commonly resorted to is to keep superior pupils in the grade normal for their chronological age and to permit them to do the work of particular subjects which are catalogued for higher grades. In many cities seventh- and eighth-grade pupils can take algebra or Latin or constructive geometry. Oakland, California, in addition to providing them with special investigating work, permits further study in languages and in music (thus providing for other than purely intellectual activity). Louisville gives some of her exceptional pupils in the fourth, fifth, and sixth grades an opportunity to begin the study of French. As they come to the seventh- and eighth-grade studies, additional work is taken from the high-school level. In a middle western city junior-high-school accelerates are permitted to "take one half year of Latin or algebra and receive a half unit of credit in civics and English and sewing also" (why this is done is not stated). In another city exceptional ability in managing the academic course rapidly, provides superior pupils with the opportunity to take commercial training, to study manual training and domestic science or French. And if that is not a sufficiently tempting bait for talent to expend its last ounce of effort upon, another city system provides French, tennis, library instruction, typing and hygiene! We predict a typical twentieth-century rate of travel over the conventional curriculum of that city!

In all these schemes there is no proposal to modify the existing curriculum. One course is prescribed. All take it, some easily, some haltingly. Some do it twice as fast as others. As one studies practices of these sorts one begins to believe that there must be something heaven-sent in this standard curriculum of the American public schools!

B. There Are Many Schools, However, Which Are Earnestly Trying to Enrich the Curriculum for Superior Children

If you ask a school administrator or teacher what modifications are made in the regular course of study for 'X,' or superior, sections, the chances are much more than even that the reply will be "we enrich the course of study."

As I turn through the Committee's correspondence, I find such statements as these:

"Beginning this year, however, we have undertaken in a small way to provide an enriched curriculum on the project basis for the pupils who are found to be in the upper quarter so far as intelligence is concerned.''

''Our policy is to give to the gifted child an enriched curriculum and, also, an opportunity to save some time.''

''We try to have at least three fairly distinct courses of study for the three general grades of ability.''

''The strong group has a greatly enriched body of matter.''

''We are now studying this problem and are inclined to believe from present data that the better way is to provide additional work for such children in the normal grade or at least a combination of enrichment of the course and rapid promotion.''

''In general, the tendency seems to be in the direction of furnishing a somewhat enriched course of study, rather than in the direction of securing more rapid advancement for the children in such 'A' sections.''

1. *What Is ''Enrichment'' of the Curriculum?*

Let us see. Heroic attempts are being made in quite a number of our public school systems to work out a curriculum of materials and activities which will be interesting and stimulating to boys and girls of superior ability. Progressive school people are trying to ''enrich'' a uniform curriculum with which they certainly are not satisfied. Enrichment takes several different forms. Let us examine them a bit.

(1) In many schools it means simply *giving more work like that of the conventional course.* In cities which follow this method the ''brighter pupils cover more ground.'' In geometry ''they do more originals.'' They work more word problems in arithmetic. They translate more pages in French. ''The rapid sections do more reading outside of texts, a more detailed study of topics.'' In vocational civics the ''rapid sections make a wider study of fields open to women, with more time on the professions requiring long training and above average ability.'' In commercial arithmetic ''the rapid-progress classes are given more content—reasons back of 'short cuts' and the like.'' ''In stenography the rapid-progress classes learn to take dictation at the rate of a hundred words a minute, while the slower group reach eighty to eighty-five.''

In Latin and French "the rapid progress groups read much more and have much greater opportunity to speak and write."

Some schools enrich by adding whole new units of materials. In *Jackson,* Michigan, Opportunity Rooms under the direction of Miss Helen Davis cover the regular history course consisting of Greek and Roman history and in addition obtain a much larger and more systematic background. I quote a bit from her outline to illustrate the method.

"In the regular course of study, Greek and Roman History is given in the 5th and 6th grades. The text (*The Story of the Old World,* Elson and Macmullan) is in the hands of the teacher, who reads the story to the children. This text begins the history of Greece with the Siege of Troy.

"In the Opportunity Rooms we began at the dawn of history and studied pre-historic man, the cave dwellers, early Egyptian, Phoenician, and Babylonian history, and the contribution of each to civilization. The principal text followed for this part of the year's work was Smith Burnham's *Our Beginnings in Europe and America.* When the class was ready to begin Greek history, supplementary material was added. In connection with this part of the history course, the children wrote and dramatized a story, "The Carrying Away of Fair Helen."

It is very probable that many cities modify their courses for superior pupils in some such way as this. They widen the scope of the field covered by the slower pupils. For example, the brighter pupils study "biography" when the slower ones do not. They read supplemental books in addition to the basic texts required of all. They meet entirely new subjects to which normal pupils are not introduced—geology and Latin and algebra and social science and the like.

(2) A second modification of the instruction which progressive schools are making for the brighter pupils is in the *method of presentation.* In some schools, although the scope of the work covered by the normal and by the superior pupils is much the same, the method of presentation is quite different. In science, for example, "the same number of topics are taken by the two groups, but more time is spent by the superior group in suggesting and

discussing possible methods of performing experiments, in applying the principles illustrated by the experiments, and in suggesting other experiments that might follow, while a similar amount of time is spent by the inferior group in review work, in following the slow and careful explanation of the teacher and in working out simple problems adapted to their comprehension. Generally speaking, one group is superior to the other in quickness of observation, in wealth of associated ideas, in power of discrimination and in reasoning ability, and an attempt is made to adapt the instruction to this difference. There exist, however, considerable individual differences among the members of each group, so that stimulus and variety are not lacking.''

Another observing school man remarks:

> ''The 'fours' (retarded ones) are slow to concentrate, need much illustration in the presentation, waste time in using a principle or attacking a problem, need much drill and constant supervision.
>
> ''The 'ones' (superior pupils) have a greater degree of concentration, waste less time, grasp an idea at its first presentation, read faster, need less drill. They can do more work in a given time . . . .
>
> ''The 'fours' are given more careful presentation; more pains are taken to discover a proper starting point; more detailed instruction is given; students are led through the first steps of any process; and they are given much drill. They need continual supervision and great care taken to be sure that ideas are accurate and that correct methods of procedure are followed.
>
> ''The 'ones' are comparatively self-directing. Lesson assignments are suggestive in form; less detailed direction is needed. More supplementary material is used. Class discussion is in the nature of comparison of ideas, rather than an effort to see that a correct idea is acquired by the student. Method is varied in such a manner as to let these students go 'on their own' to a large degree.
>
> ''The variation between 'one' and 'four' groups occurs in less degree among all the groups. Sectioning as we are doing helps to get students of a similar degree of power and type of thinking together, so that the effort of the class is more nearly what is needed for each student.''

It appears, therefore, that schools are recognizing distinction in modes of thinking on the part of bright pupils and are adapting methods to them. Here are additional illustrations: ''Accelerated groups use more advanced books, are encouraged to find references for themselves.'' They are ''urged to make free use of library.'' ''Teacher supervises preparation, but actual study work is done by the child.'' Accelerated groups ''have longer assignments, perhaps not including more general ideas, but an elaboration of these ideas.''

Class exercises tend to be conducted for the rapid groups ''largely as socialized recitations, encouraging questions and discussion.'' Superior pupils carry on many special investigations, making individual reports, ''some involving quite careful research.''

In the *Detroit* public schools the Department of Instruction, working under the direction of Mr. S. A. Courtis, has evolved tentative modifications of the curriculum for pupils of varying ability. Three groups are formed and are called 'X,' 'Y,' and 'Z' classes, respectively. Mr. Courtis reports the following differences in treatment of the X (highest) group and the Z (lowest) group:

Differences in Treatment of X and Z Groups

''I. Teacher procedure with X Group
  1. Give complete generalized abstract statements of fundamental principles.
  2. Provide opportunity for questions from pupils until statement is understood.
  3. Present a desirable possible achievement which will involve application of principles.
  4. Provide opportunity for independent attempts at solution with the teacher's assistance.

''II. Teacher Procedure with Z Group
  1. Analyze principles to be learned into essential related basic experiences.
  2. Present each basic experience as an entirely separate experience worth while in itself.
  3. Give generalizations based on these experiences in the form of rules of procedure.
  4. Practice the children in the application of these rules to specific problems.
  5. Test power of children by giving them as many problems as needed for independent solution.''

In *Cleveland* a systematic attempt has been made to segregate pupils of I. Q. of 120 and above, and to provide a curriculum adapted to their superior abilities. Assistant Superintendent Herbert D. Bixby has prepared a statement of the method of handling these pupils. We quote it in full:

"It was early determined that the object of instruction should not be to speed up these children, but rather to enrich and broaden their course of study. However, it was very soon found to be extremely difficult to retard their progress to the rate of the ordinary classroom. No particular attempt was made to do this, and as a consequence, some time, probably from a year to two years, will be saved during their elementary-school term, but the emphasis has continually been placed and kept on enrichment.

"It was very soon seen that if these children were to be given the opportunities apparently desirable for this type of child, advantages must be offered them that were beyond the scope of any public school system. This difficulty was overcome by the formation of a committee of interested citizens who guaranteed to offer further advantages to these children and to finance extra opportunities when this seemed desirable. This committee, sponsored by the Women's City Club of Cleveland, has been of inestimable help in the work, both in the above-mentioned manner and in maintaining the interest of the public in the experiment.

"At the beginning of the following school year, interest had been aroused to such a degree and the problem had progressed to such a point that it was very easy to form other classes at various points in the city. To-day there are upwards of one hundred children in six classes from the second to the sixth grades, receiving special instruction, and this number could easily be increased were it thought advisable to do so at this time. In addition, one class entered junior high school this fall and is continuing to receive special attention.

"Several interesting things have been noted since the work began. For instance, when children are placed in these special classes after having spent the first part of their school life in the classroom, it takes from two to six months to overcome habits of indolence that are usually present, and to arouse in them interest in their school work sufficient to cause them to pursue a difficult task through to the end. This condition is probably due to the influence of the methods used in the ordinary classroom upon children of superior intelligence. It is also apparent that children of this type have little interest in the drill subjects or in that part of any subject which is comprised of drill work. Inasmuch as a certain amount of drill seems necessary to establish habits of thought and fix certain facts, probably an increased amount of effort is required on the part of the teacher to get this type of child to do this particular kind of work. It has further been noticed that this particular type of child has great power to originate and carry through the investigation of a subject when once his interest has been enlisted in a problem. Material is being gathered for further generalization of this nature, but the above will serve as interesting examples.

"The problem of enrichment is a difficult one, and one that will vary, as conditions under which classes are originated and situated must necessarily vary. To begin with, all attempt to follow the regular course of study was eliminated. A free road was opened for the teaching to these children what they seemed to need. Special instruction has been given those children showing special talent in art or music. In French instruction has been offered with particular emphasis placed upon the conversational side of the language. Effort has been consistently made to bring the children into contact with various activities of this locality, and to make these activities serve as a basis for further classroom instruction. To this end excursions have been made to many industries. Many of the civic activities of the municipality and of the county have been investigated. The various museums of the city—Art, Natural History, etc.—have been visited. Performances in the theaters, when they were suitable for children, have been attended, and concerts, lectures, etc., have been made the basis of illustration and instruction in classes. The problem of enrichment has by no means been solved, but these classes are serving as a means of gathering valuable data, and as time goes on, should give us further and valuable light upon this subject.

''Nothing has occurred during the experiment that would lead us to believe that segregation of these children is detrimental to their welfare. No egotism has appeared that cannot be successfully overcome by a teacher with common sense. The advantage of belonging to a homogeneous group with common social interests is apparent, and the fact that these classes are located in the regular school buildings preserves for these children contacts with many other children of various types which tend to counterbalance any feeling of false superiority which may arise. The idea is constantly held before the minds of these children that inasmuch as they have more to give, more will always be expected of them.

''It is, of course, not known as yet what the conclusion will be, but enough progress has been made to warrant the continuance of the experiment and to expect that something definite will be contributed toward the training of leaders in all the various forms of activities necessary to efficient and successful national development.''

2. *Examples of Enrichment Through the Use of Projects*

But some school men have seen the problem of curriculum-making for superior children very differently. To them, providing ''more work and more difficult work'' or ''studies of a higher grade'' is not an adequate solution. These people are concerned with the complete development of children and base the activities of the curriculum on driving dynamic interests. In the educational jargon of to-day such people organize ''projects.'' They strive to utilize the interests of children by ''life situations'' in the school.

One of the best examples we have found is the work of Mr. **Benjamin B. Rohan, Principal of the Second District Schools,** *Appleton*, Wisconsin, referred to in several chapters of this *Yearbook.* Mr. Rohan and his staff have formed among their pupils in the seventh and eighth grades nine "interest clubs." These consist of a Teachers Club, for those who think they might like to become teachers; a Forestry Club, for the study of forestry; a Newspaper Club, for those interested in running school newspapers; an Auto Mechanics Club; a Radio Club, an Industries Club and an Orchestra. Let Mr. Rohan tell the purpose of such clubs in his own language:

"The purpose is to give the bright children something to do in which they have a genuine interest, so that during their spare time gained in the classroom they will not be without work.

"We aim to stimulate purposeful reading. The clubs meet for a forty-five minute period once a week. During this time the interest is so aroused that it carries back to the classroom, where books pertaining to the interests are available. When the child has any spare time, he may have access to them. Problems are set during the meetings of the clubs, so whenever a bright pupil is free from his regular class work he may work on a personal problem. He always has something to do, and it is something he likes to do.

"All of these clubs meet after school hours and the children are in them because they chose to be. That their interest is keen is proved by the fact that there is a high percentage of attendance.

"One of the basic aims of the interest work is to find each child's interest and to set him to work studying it. By so doing, we may get such a grip on him that he may do better school work and even improve considerably in his conduct.

"What a joy it would be if our students eagerly entered into all our classes with a vim and down in their hearts experienced the feeling of satisfaction which comes from tusseling with a piece of work that one enjoys mastering! What a joy it would be if we could connect our teaching of mathematics and history and English and geography, etc., with a subject of burning interest to the child!"

How do these clubs work? I quote from a description of one:

"The newspaper club was the most successful and is a splendid illustration of what interest work can mean and do for children. Four girls who liked this kind of endeavor worked in pairs and each pair published a paper, one the *Lincoln Trumpet* and the other the *Lincoln Tattler.* This was splendid business training, because the proceeds from the papers had to pay the cost. Stencil and paper cost money and so much so that a copy of either paper costs two cents; as much as the large Milwaukee and Chicago papers. To meet this expense 'ads' had to be sold and circulation secured. This was accomplished, but by no small effort. So successful were the girls in selling their papers that they had in the neighborhood of one hundred customers, among whom were three people from our State Department of Public Instruction. 'Ads' were solicited from people in school who had things to sell or services to offer. One pupil gave aesthetic dancing lessons—she bought space; others advertised handmade flowers, a washing machine, a rocking chair, a mattress, etc. This was all good business.

"Another feature was the generalship and organizing ability displayed. A corps of reporters had to be on the job to gather the news from all departments of the school. This news had to be sorted and devised so as to keep the personal element at a minimum. Yet, the reporters had to be kept busy and interested. This was done, for neither paper ever lacked news. Again, the papers had to sell, so they had to be interesting. This was done by having in each issue something about all parts of school life. The girls waded through volumes of reading material to find interesting stories and funny jokes, and here came in much training for selection, rejection, amending, and judging. Each week an original story by one of the editors appeared. To do this alone required no small amount of work. One of the editors became so interested in dog stories that she wrote to Mr. Terhune, the dog expert, regarding one of her problems and he wrote her a splendid encouraging answer. This incident she will never forget.

"After all the material was gathered for each issue, it had to be arranged and stencils made. For one paper they were made in the school office and for the other at a private home. Then they were run off on the school mimeograph.

"So eager were the scholars to get these papers that the demand usually exceeded the supply.

"Again, these papers were a decided help in improving the morals of the school. The editors did not hesitate to call attention to any abuse of the property or privileges and frequently the teachers' attention was called to something which otherwise might have passed unnoticed. If the principal wished to send a message to all the pupils, the papers served as a splendid medium. They urged our boys to be manly in our athletic contests; they urged hiking clubs, bicycle clubs, and baseball teams for the girls. All of which were formed."

One cannot read Mr. Rohan's statement of the work of these Interest Clubs in Appleton without recognizing that such a supplementing of the curriculum comes close to providing "life situations" within the school. A plan like this provides for the development of abilities other than those of verbal intelligence. The clubs are varied enough to offer an appeal to widely different interests. Work in the clubs gives practice in parliamentary procedure. These clubs are social groups, and participation in them brings out latent qualities of co-operation and team-work; leadership and followership are both provided for. Opportunity for attacking 'real' problems of life is given. Practice in oral discussion is supplied.

There are real intellectual outcomes, also. Children's minds are sharpened by interplay one against another. Interest in some live practical problem or need stimulates new reading interests. Boys and girls learn by being 'blocked' on a real enterprise that one must have adequate information to solve problems, and that one must have thorough mastery of technique when technique is demanded. So, work like this teaches children the value of books, makes the library a place of real interest, and sends them to the study of their school courses with a more vital interest.

Furthermore, such activities as those in the Appleton curriculum provide for the many interests of boys and girls. Their social abilities, their mechanical aptitudes, and their esthetic interests and abilities can be trained as well as the fundamental verbal intelligence. It must not be forgotten, however, that opportunity to take part in these during school hours (aside from the one weekly meeting) comes only to those who complete the regular prescribed curriculum in less than normal time and the prerequisite for this is verbal intelligence.

No doubt many teachers are providing opportunities for pupils who are gifted in ability to write to develop themselves. From *Detroit* comes another fine example. Miss Anna M. Engel has submitted to the Committee samples of pupil writing done in classes for superior pupils. The stimulus is found in the organization of a 'class-book' in which are compiled essays, editorials, verse, stories, cartoons, etc. The median I.Q. of Miss Engel's classes was 118.

Perhaps the most conspicuous product that has appeared from the teaching of young writers of talent in regular school classes, is *Lincoln, Verse, Story, and Essay,* a 160-page printed publication of original writings of pupils in the seventh to twelfth grades of the *Lincoln School of Teachers College.* This publication represents poetry, essays, and stories published in the school paper, *The Lincoln Lore,* under the direction of the head of the English department of the school, Mr. Hughes Mearns. The average I.Q. of the thirty pupils whose work was selected for publication was

124. Mr. Mearns' unusual success in drawing out young writers of talent is shown by the fact that eight of the products in the volume are cited in the 1923 Anthology of Verse. The writers, on the whole, may be regarded as 'superior' in verbal intelligence as well as in literary ability.

Two distinctly different methods of 'enriching' the curriculum have been commented upon: first, that of 'studying the subject matter itself in greater detail;' second, that of setting up 'real projects.' It should be said before leaving the subject that many schools now use informal methods of providing work for the free time of superior pupils. We find frequent statements in our correspondence that, when individual pupils finish a given piece of regularly assigned work, they are given problems for special investigation and report. On these they work alone. They 'read up' on a special problem for the purpose of reporting it to their class. They collect material for an original theme and read it later to their classmates. These are practically always problems assigned by the teacher, however, not those which grow out of real or felt needs in some 'life situation.' Hence they engage the attention of pupils with varying degrees of 'drive' behind them. Whether the children are vitally interested in them is an open question. Very likely they can *become* interested in most of them. One of the most baffling problems which we face in organizing curricula and methods of instruction is that of taking advantage of the driving purposes of children. I am convinced that at least it is *not necessary* to turn the whole curriculum into one continuing series of 'life projects' in order to engage that whole-hearted interest of pupils in school work.

WHAT, THEN, IS THE PRACTICAL PROBLEM BEFORE SCHOOL ADMINISTRATORS?

So much for the review of what the country is now doing. Tendencies stand out clearly, even from our limited sample of schools. In trying to reach a judgment as to what curriculum recommendations will help public schools most, one arrives first at this fact: *There are startlingly few classes for truly gifted children in the* *country.* Whatever is done for the very unusual child is done by treating him as a *special case.* He is promoted to a higher grade; he is permitted to 'elect' one or more subjects of a higher grade; he is permitted to make special investigations and report; he is given a more detailed and compelling treatment of the same topics. Whichever one of these methods is employed, his case is treated as an individual one. Segregation of the *truly* gifted into classes is not now practiced by public school systems.

There is, however, coming rapidly into general practice the division of pupils into ability groups. In schools where that is done the 'A,' 'X,' or 'best' group is very generally made up of the best third or best quarter of our pupils. Hence such a group usually includes some pupils who are truly gifted. Furthermore, we have seen that they may be gifted in any one of several directions. They may be unusually endowed in verbal intelligence; they may be prospective inventors; perhaps they are children who give promise of great artistic or musical ability.

In what I have to say, therefore, with respect to a practical program of procedure, it should be kept in mind that we are dealing with widely varying groups of "better than average" children and not with classes of truly gifted ones. This is not to imply that it is not now possible and feasible to organize in every school system of size in the United States classes for the truly gifted. *I believe that both from the standpoint of the development of each individual to the highest possible point and from the standpoint of the greatest contribution to the improvement of society, the gifted children in each town and city in our country should be discovered, organized into working groups, and given the most far-reaching course of training our intelligence can organize.* This includes not only those of great "abstract intelligence," but also the prospective painters, musicians, humanitarian leaders, research investigators in the special scientific fields, inventors and leaders in the mechanical professions, etc. An industrial democracy in which cultural development has not kept pace with a spectacular mechanical growth can ill afford not to spend its energies lavishly on the attempt to inaugurate such a program.

Today, however, we face the practical situation that, although our democracy has not set up that program, it has begun to move slowly in that direction. Our task at this point, therefore, is to consider what practical recommendations can be given to schools which are faced with the problem of providing a modified curriculum for large groups of 'better-than-average' children, groups which themselves are not homogeneous in ability.

A. The First Step Is to Distinguish Clearly Between the 'Skill' Activities, the Informational and Thought-Provoking Activities, and the Appreciational Activities of the School

Confining our attention first to the elementary school, it will be helpful to recognize these three fundamentally different kinds of activities and materials: first, the skill activities; second, the informational and thought-provoking activities; and third, the appreciational activities. By the skill activities I mean those embodied in such subjects as spelling, oral and written expression, handwriting, and formal arithmetic. By the informational and thought-provoking activities of the school I mean history, geography, civics, and parts of industrial and household arts and elementary science and mathematics. The appreciational activities include literature, expressional drawing, and music. What shall we say of the instruction of our 'better-than-average' pupils in these respective lines of endeavor?

1. *What Shall Be the Instruction of Superior Pupils in the 'Skills'?*

As to content, should it not be the same as the instruction of all the other pupils? There is no reason why our prospective leaders should not be expected to spell automatically the 4000 words of the Horn list which will be used by most adults in writing. In fact, the probabilities are greater that they will need automatic mastery of these words than that the great rank-and-file will. That they will need more than 4000 is true enough—a specialized vocabulary which will develop later in life and which will be learned later more effectively.

Is not the conclusion the same for skill in oral and written expression? Our leaders, of all people, are held responsible for proper control of language, either in oral speech or in their writing. Even the rank-and-file become doubtful about an 'elected leader' who cannot make them linguistically respectable before the world. But in expression, as in spelling, the task of training prospective leaders involves merely the perfection of a relatively isolated and very definite body of skills. The requirements for the skills are the same for all people, be they gifted or mediocre.

Command of the essential number habits and ability to write legibly at a moderate pace are also skills that our superior people must be held responsible for. But, as with the two preceding ones, they need no more skill nor command of a large number of skills than do the masses of our people.

These four 'skill' subjects—spelling, arithmetic, grammar, and handwriting—have until recent times consumed a large fraction of the time and energy of our pupils. Are they to continue to do so for our superior ones? It is not necessary. These skills can all be mastered in a relatively small proportion of our total school time.

To accomplish that, however, we shall need to make certain changes that have been frequently urged upon us of late. *In the first place, we should completely individualize the acquiring of these skills.* Dr. Washburne is thoroughly right. Time can be saved and the skills can be mastered more effectively by intelligent individualization. Learning to spell, to write, and to figure are not tasks for social interplay. They demand 'practice exercises;' learning is by repetition; definite stints are to be accomplished. Let us hear nothing *at this point*, then, about "vitalizing the curriculum" or about "projects." The job is, for example, learning to spell, not social argument.

Washburne himself has developed an excellent technique for doing it.[3] It runs something like this: First, determine by objective investigation of social needs (of children and of adults) what words, number processes, and grammatical usages need to be learned, and how well they need to be learned. Call these the particular goals, or objectives, of the skill part of the curriculum. Second, test all the pupils on them so as to discover in which skills each is lacking. Third, set up definite practice exercises and drill each pupil in each process until he has the desired amount of skill. Fourth, re-test periodically, at intervals of increasing length, to determine permanence of retention and give review practice exercises where needed.

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[3] See for details Washburne's chapter in this volume.—*Editor.*

Sounds mechanical, does it not? It is, but so is the task prescribed. The job before us is precisely the mechanical one of determining what skills need to be mastered by all, or relatively all, persons, and of perfecting them with the utmost possible dispatch.

What does such a procedure mean in the education of superior children? Merely that in a relatively small fraction of the time of each school grade through which they pass these superior children will attain the desired mastery of the necessary skills. The published reports of Washburne and others supply evidence for such a statement. There is no doubt any longer that the definite individualization of the skills and the adoption of a technique something like that outlined will result in the perfection of the necessary skills by even the mediocre pupils in one-half to two-thirds of the time now devoted to them. For the 'superior' pupils it is a safe generalization that all can master the skills in from 30 to 40 percent of the present amount of time allotted to them.

Remember that this is not a theoretical guess, it is an estimate based on the accomplishments of children in public schools. It means, then, that *from 60 to 70 percent of the time of superior children which is now devoted to spelling, formal arithmetic, handwriting, and grammar can be saved for something else.* Sixty to seventy percent probably means at least an hour a day.

Saved for what else? More spelling? More arithmetic? More proficiency in handwriting and in grammar? No, saved to be employed in a far more effective manner. Saved for the development of each child along the line of his special bent.

At this point it is important that we consider each of these superior children as an individual endowed with special abilities and specialized interests—some in music, others in art, in literature or mechanics or in the study of community, national, and international affairs. Just as the interests and abilities are specialized, so is our administrative and teaching task a specialized one—it is the task of making individual programs to utilize time saved from the humdrum of the skills. An hour a day at least—perhaps more—can be utilized in developing each individual's best possibilities. That means that children are to be released from further practice in spelling or writing or grammar or arithmetic to work at whatever the child wants to do, *provided that want fits in with a definitely agreed upon program of work which the teacher and pupil have worked out.* Such valuable time should not be used, of course, for this-that-or-the-other endeaver, which is changed with the passing whims of the moment.

2. *What Shall Be the Instruction of Superior Pupils in the Informational and Thought-Provoking Activities?*

The program for the skills is simple, definite, easily designed, and relatively easily administered. What about the informational studies—the social sciences (history, geography and civics), the physical and biological sciences, household and industrial arts? In other words, what about the thought-provoking studies of the school?

Are there minimal essentials in this field, too? Are there definite sets of facts and principles which should be known by all superior people? Yes, but the problem of instruction is far more complicated than that and includes far more than the learning of merely those essentials. Even in these 'content' fields, of course, there are bodies of facts which can be agreed upon as necessary to the equipment of all educated citizens. For example, a person cannot think intelligently about America's part in world affairs unless he has at his instant command both precise imagery of the *location* of natural resources, lines of transportation, communication, and trade, and distributions of people, and also has a clear grasp of important *generalizations* about them and other matters. Similarly, there are scores of *problems* which the typical citizen faces that demand a mastery of the important generalizations and facts of industry, business, community, and national life, waste and conservation and the like. Our prospective leaders—that is, our superior pupils—must master these even more completely than do the rank and file. So it is also in general science, in physics, botany, zoölogy, chemistry, in industrial and household arts. There *are* minimal facts and principles that all, or relatively all, persons should be familiar with in order to take their places in an educated democracy.

But, in history and geography, for example, is the problem merely that of learning the necessary facts in a minimal list? Once these are learned, are our 'bright' pupils to be excused from the further study of the 'subject' to engage in some other more interesting activity? Probably not. The case here is not so clear as with respect to the learning of the skills, but the evidence so far accumulated is pretty convincing. No, the problem of what to do with superior pupils in the informational and thought-provoking activities is not merely that of perfecting a set of desirable habits or of 'learning' a set of established facts and principles. Our task in those activities is to be very clearly distinguished from what it is in the skills, and for two reasons.

In the first place, the learning of the skills is an individual matter. In contrast, the work of the informational and thought-provoking activities is much more largely a group matter. The most important outcomes from them are *group* outcomes, and these can be secured only by group activity. When one is learning to spell, to add, or to write, he should be left alone—others around merely get in the way. When one is discussing ways and means of accomplishing certain social ends, on the other hand, he needs the co-operation of a social group. Learning to organize, edit, and publish a newspaper, carrying on the work of a literary society, or of an orchestra, engaging in forensic debate, discussing the merits and demerits of methods of conducting governments, etc.—these are group activities. To be successful in a school, they must be carried on by groups of pupils.

A Plan for Combining Individual and Group Instruction in the Informational and Thought-Provoking Activities. Here we obtain our cue for the organization of the work of these activities for superior pupils. Some of the activities can be managed best on an individual basis; others demand group co-operation. If the group co-operation is to be efficient, however, the members of the group must have the same facts and principles at their command. Hence, the group must be kept together on the same general job. Individuals cannot be working at distinctly different tasks if the result is to be effective group co-operation. Let us study some examples.

I have recently made a study of various plans for individualizing instruction (the Burk, Washburne, and Dalton plans, for example). The study revealed certain strengths and weaknesses of individual instruction and made clear the necessity for utilizing both individual and group methods in the social sciences.[4]

It appears, then, that neither complete individualization nor the complete use of group work (of the kind followed by the conventional recitational courses) in history and geography will give us the desired results in such work as the social studies. What combination of individual and group work will effect the desired outcomes? Let us see:

We must first answer two questions: (1) What activities can be carried on best by pupils alone? (2) Which ones require that several pupils work together? Reading, map-making, graph-making, and writing individual reports are examples of the former; open-forum discussion and debates well illustrate the latter. First, let us consider the 'individual' activities.

Reading is the basis of all the work, of course, in these fields, and reading is an individual activity. From the lowest grades a large amount of motivated silent reading should be provided. The combined individual-group plan provides, therefore, that all reading shall be done in large enough units to permit each pupil to read at his natural rate. The course is divided into working units, varying from four to nine or ten class exercises in length. To illustrate: to the study of the topic, "Transportation; the Many Ways in Which People and Things Are Carried From One Place to Another," in the seventh grade, approximately twelve successive class exercises are assigned. The work is divided into three working units, each of three or four class exercises. Each one is based on definite reading assignments, specific map and graph exercises, and individual investigation. The basic reading on each section is from the pamphlet, *Resources, Industries and Cities,* and is about the equivalent of 30 pages of an ordinary text in elementary-school civics or history. All members of the class—bright, mediocre and dull—begin the reading of each a section at the same time. From then on, for, say, three days, the work is 'individual.' Each makes the required individual maps and graphs, answers required questions or works out set problems at his own natural rate of work. As each pupil completes these set tasks, he takes a test which appears at the end of the section in the pamphlet. He knows from the test exactly the kinds of knowledge and skill which are demanded of him. When the teacher is satisfied with his mastery of the basic work, he is permitted to do further work of his own choosing—with only one restriction: it must deal with the topic which is being studied at that time.

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[4] The practical working out of the scheme is illustrated in the revised edition of the *Social Science Pamphlets* now being used in experimental trial in a number of co-operative systems.

For further illustration of provisions for superior pupils in the study of the social sciences, see the report by Hill elsewhere in this *Yearbook* and also Part II of the *Twenty-Second Yearbook*.—EDITOR.

Why restrict the superior pupil to that particular topic? For two reasons: first, our investigations are very convincing that there are more socially important readings with which growing youth should come into contact, more generalizations of fundamental importance about social, industrial, and political life, and more problems of contemporary society with which boys and girls should become acquainted than time can possibly be found for in the school curriculum. It behooves us, therefore, to use every moment of allotted time for the careful study of problems and modes of living which investigation shows to be important in the education of our future citizens. Especially will this be true of superior pupils—America's prospective leaders.

The second reason for keeping all pupils in the class group at work at some phase of the same general topic is this: when all but the slowest and dullest (some few in each class never 'finish' a task!) are through with the work of the unit, a round-table discussion is carried on of the issues and central questions at stake. At this time superior pupils make their individual reports, and an open forum—occasionally definitely a debate—is carried on of the problems of the unit. If this is to be vital, if it is to be of interest to all and to be entered into by all, all should have been engaged in the study of it. To permit pupils to take up other activities would set up counter-interests that would tend to kill the vitality of the group discussion.

Now, nothing is more important in the activities of these subjects here under consideration than the opportunities for the interplay of mind on mind. Practice in 'thinking on one's feet' is a fundamental outcome. It is important to seek out and to set up the largest possible number of situations which are designed to create agility of thought and of oral expression. One great danger lies in the important tendency to individualize our instruction: that it will result in the minimizing of the importance of team work.

At this point let us recall that our instruction is responsible for developing the all-round boy and girl. Specifically, it is responsible for developing those gifted in *social intelligence* as well as those who are verbally superior. Hence our discussion of group activity is directly pertinent to this important problem. Social leadership, ability to organize people and their affairs, skill in managing group debate, and the like—all these abilities can be developed only through definite and systematically planned activity. To have skill in the art of planning group activities, one must have practiced the art. To preside effectively over a town meeting, a lodge meeting, a debate, a hearing—what not, one must have faced many times the spontaneous situations of which these are made up. The school is responsible for providing years of training in meeting just such situations.

For such reasons as these, we believe that the social sciences especially must provide constant practice in social co-operation. For such reasons it seems clear that pupils must be organized into groups and that curriculum materials must be designed definitely on the basis of group activity. At the same time shall we individualize all the processes that can be handled most economically and effectively at the natural paces and by the natural methods of each individual pupil working alone? By all means. But never should we lose sight of the need for utilizing these processes in social interplay.

A Suggested Make-Shift for Conventional 'Recitational' Courses. A practical emergency faces administrators and teachers who have sectioned their pupils into ability groups. I have in mind such subjects as mathematics and science. Junior-high-school pupils have been divided into X-Y-Z sections—that is, into superior, average, and inferior groups. The teacher faces a difficult question: what material shall be given these three differing groups? He has no time—oftentimes has not the ability—to design three different courses. He must depend upon the textbook and the teacher's manual. He looks over the available texts, hoping that there are differences between the books sufficiently marked to justify using one text in the superior class, another in the normal group, and still a third in the inferior class.

In this practice of many teachers and in the fortunate difference between textbooks rests a tentative solution to tide over the immediate emergency. Ideally, we should have at least three types of course in each of the great fields of school work, so graduated as to fit varying abilities of pupils. Such planned differentiations in textbook writing have never been carried out. If they had, it is very doubtful whether textbook publishers would finance their printing and sale.

We do have, on the other hand, books and materials published by different companies which are different enough in graduation, style, and difficulty so that tentative approximations can be made of fitting textbooks to groups of varying ability. An excellent example of this practice is reported by Mr. Arthur Brogue from the J. Sterling Morton High School, Cicero, Illinois. In that instance, mathematics pupils are organized in three ability groups, with each group using a text adapted fairly well to their rate of learning.[5]

I have discussed the matter with specialists on textbooks in the mathematics and science fields. It is their judgment that there are now available textbooks and other organized materials that are different enough so that schools might well use particular ones in classes for superior pupils and others with young people of less brilliant ability. This would be, of course, only a make-shift. It is a practical make-shift, however, and one that would assure some slight degree of adaptation of material to young people of fairly distinct mental abilities.

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[5] See the reports by Brogue and by Breslich in Section II.—EDITOR.

3. *What Shall Be the Instruction of Gifted Pupils in the Appreciational Activities? Our Limited Equipment*

What, finally, shall be the program for gifted pupils in the appreciational activities of the school? What are we doing for those who are unusually endowed in music, for those who have conspicuous capacity for writing, for those who might be our leaders in art?

It is very doubtful if the inquiries of your Committee have discovered the best provisions that are now being made for these gifted ones in public schools. In a few instances examples (like that from Appleton, Wisconsin) have been turned up of very definite provision for them. There must be—I know personally of two or three—a goodly number of public school systems in which curriculum opportunities are given for special training for individuals in music and in art.

Are not schools obligated to make just as definite provisions for this division of our gifted children as they are for those who excel in mathematics, reading, physics, or the social sciences? They are, indeed—all the more so because the startling development of mechanical civilization in America has not been accompanied by a corresponding spiritual and esthetic advance. America can well afford to take lessons from the history of more established industrial countries and systematically assay the esthetic ability of the pupil body of her schools. Once discovered, talent should be developed by definite curriculum modification.

The development of the abilities in question is an individual matter. Skilled and artistic musicians, writers, painters—what not, are sought in the education of the conspicuously gifted. Is training then a matter of 'minimal essentials?' No, it appears not to be that. It is a matter of developing each individual to the point at which he can make his greatest contribution to society and at which he can secure the greatest possible enjoyment. Our administrative responsibility, therefore, lies in the direction of providing individual programs for the conspicuously gifted in the esthetic or appreciational activities. Let the school set up machinery by which those who are conspicuously gifted in music can be discovered. Let us use the Seashore tests and invent others to supplement them. Let us devise tests to discover the artistically talented.

Let us, for example, organize a program of constructive writing through our English courses that will reveal pupils of rare literary ability. The task of discovering young writers of talent is probably not so difficult as that of picking out those who are gifted in art and music. There is a very good reason for that; the correlation between ability in writing and verbal intelligence is high.[6] On the other hand, from preliminary studies which we have at hand it appears that the relation between verbal intelligence and esthetic and appreciational abilities must be distinctly low. At the present time, therefore, conspicuous success on a verbal intelligence test would give considerable promise of capacity for learning to do constructive writing. Such success would throw little light on probable future attainments in the esthetic field.

Nevertheless, is not the obligation clear that we must find ways and means of discovering these unusual people? Once they are found, let us adapt school programs to their rare abilities. Let us, for example, use the time saved from the skills for such purposes.

Should we not bring into the school specialists in music, art, and literary instruction who have the ability to develop these gifted young people?

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[6] Illustrative data on this question will be reported in the February 1924 issue of the *Jour. of Educ. Psych.*

CHAPTER VII

PERSONAL AND SOCIAL CHARACTERISTICS OF GIFTED CHILDREN

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Whenever special provision is proposed for gifted children, particularly provision that tends to accelerate them beyond children of their own chronological age, there is certain to be some opposition raised by those who would have us believe that gifted children as a group are physically and socially immature, inclined toward 'bookishness,' and prone to show neurotic and psychopathic tendencies. Since the advent of wide-spread interest in children of superior endowment, no small amount of research has been devoted to ascertaining the nature of their non-intellectual traits. There are numerous studies in which teachers and investigators have rated superior children in various character traits; Baldwin, Terman, and others have made extensive investigations of the physical development of gifted children; Root and others have centered their attention upon the psychological traits of these children aside from the strictly intellectual.

Contrary to the popular belief current some ten years ago, all these studies indicate that as a rule, the unusually capable child, instead of being a one-sided product, over-developed in one or two respects at the expense of all others, is really an all-round individual, not only highly endowed intellectually, but superior in moral, social, and personality traits as well. Cases in which these conclusions are not borne out are conspicuously few.

I. Heredity and Home Environment

In practically every intensive study that has been made of gifted children some consideration has been given to their nationality, heredity, and home environment. The results of these studies agree closely with each other, and with the natural expectation that children of superior mental endowment as a group come from sound stock and from homes above the average.

Nationality. It appears to be generally true, regardless of the section of the country in which the study has been made, that gifted children are, in a large majority of cases, native-born and of American parents. Most investigators report a marked excess of English, Scotch, Jewish, and German parentage, and the case studies of many children with exceptionally high I.Q.'s show a predominance of these racial strains in the ancestry.

Heredity. There seems to be a marked tendency for gifted children to come of superior mental stock. Of the group of 643 superior children studied by Terman, a large number have relatives who are listed in *Who's Who* and in other biographical dictionaries. Twenty-two percent of the members of the Hall of Fame are known to be related to this group of children.[1] Whipple in a study of 125 grade skippers found that 81 percent were of "gifted" ancestry. Dr. Yates estimated that nearly three-fourths of her group were of superior mental heredity.[2] Other studies of a similar nature tend to substantiate the results of these investigations.

Occupation of fathers and education of parents. The occupational level of the fathers, and the education of both mothers and fathers further indicate that the intellectual heredity of these children is of a superior type. Several studies in which the occupations of the fathers were classified according to Taussig show that 70 percent or more fall in the two upper levels of that scale, *i.e.*, either in the professional class or in the business and clerical groups. Since only about 7 percent of the general population belong to these upper levels, we are justified in the statement that the superior homes of the community are those in which gifted children are largely to be found. We do find, however, instances in which a small percentage of the pupils in gifted classes come from the semi-skilled and even the unskilled labor groups. The distribution of the occupational levels of parents of gifted children in the public schools is likely to vary, however, according to the section of the city in which the class is found, and according to the number and standing of the private and parochial schools in the district.

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[1] See Chapter IX of this *Yearbook.*

[2] Yates, Dorothy Hazeltine. *A Study of Some High-School Seniors of Superior Intelligence.* Public School Publishing Co., Bloomington, Illinois. 1922.

Both mothers and fathers of gifted children are, as a rule, better educated than the parents of average children in the community. Most studies show that in the case of gifted children, 50 percent or more of the parents attended the high school, and that 20 percent or more attended college.

Home conditions. A favorable cultural atmosphere and the helpful co-operation of parents, as well as definite educational training, are found in the majority of the homes. Indeed, Root[3] found the cultural tone of the homes in the 53 cases of supernormal children which he studied so superior that he was led to state: ''There is often a definite loss as regards elegant usage when a child from a cultured home comes in contact with teachers and pupils of a distinctly lower cultural level.'' Root also feels that the cultured home surpasses the school in incidental teaching of reading, literature, appreciation of flowers, love of animals, together with certain other subjects, and in frank individual development and the avoidance of all sorts of social fears and superstitions. Family success, tradition, and ambition have often been an immediate as well as a remote motive for the earnest attitude and high level of academic accomplishment of the children.

The home environment of those gifted children who come from the less cultured homes is usually rated superior to the general surroundings of the neighborhood.

It is interesting to note that in many case studies of superior children who have not lived up to the expectation warranted by their superior capacity, discordant home relations, lack of parental supervision, or objectionable home training are frequently mentioned as contributing causes.

In a study made of over 175 superior children of Detroit, Miss Anna Engel found that gifted children are not largely 'only' children. In her group she found 15 percent were the only children in the family; 54 percent were the first child in the family; 30 percent were the second child; 10 percent were the third child; and 6 percent were the fourth, fifth, or sixth child in the family. The greater number of these children came from families of one, two, or three children. Only 27 percent of the children came from homes where there were more than three children, and 73 percent came from homes where there were fewer than four children. The results of Terman and a few other investigators who have collected information on these points seem to corroborate these data.

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[3] Root, William T., ''A socio-psychological study of fifty-three supernormal children.'' *Psych. Monographs,* Vol. 29, No. 4: 1921.

The replies to a questionnaire on the personal and social aspects in the education of gifted children recently distributed by the writer agree very closely with the results of the more carefully conducted studies mentioned above.[4]

II. Physical Traits

Another important outcome of the scientific study of gifted children has been to disprove the once commonly accepted belief that mentally superior children are physically inferior. Yates, Terman, Root, Woodrow, and others have shown that mentally superior children as a class tend to show earlier physical development than normal children. Baldwin, whose chapter in this volume should be consulted for a full discussion of the physical traits of gifted children, has figures to show that there is a tendency for physical and mental precocity to accompany one another. Teachers of gifted classes in reporting upon the features that distinguish their groups from a normal group, frequently mention high average attendance as a distinguishing feature of the gifted group, a condition which must be due in part, in these days of increased efficiency of attendance departments in the schools, to superior general physical condition and fitness.

The tendency to under-rate the physical development of superior children has doubtless arisen from the administrative policy in our schools of promoting children beyond classmates of their own chronological age, so that teachers have been judging these children outside their own age groups, and pronouncing them 'weaker' when as a matter of fact they are merely 'smaller.' In this connection the writer was interested some time ago in discovering that of the twelve or thirteen most accelerated children in the elementary grades of a certain city school system, only one pupil was found to be the smallest child of the group in which his mental ability had placed him! Reports from teachers the country over reflect what seems to be a general tendency for children of superior mental endowment to be of superior physical endowment as well. There is, of course, some mention made of the high-strung, under-developed child, but his case is so rare as to lead us to believe that he is found no more frequently in a gifted group than in a normal group.

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[4] The results of this questionnaire, referred to frequently in this chapter, represent the opinions of 62 teachers and supervisors in 18 states rather evenly distributed throughout the country. The writer wishes at this time to acknowledge the generous and helpful response of those who contributed.

III. Social Traits

The opinion is frequently expressed that gifted children, when placed, as in a school system, among those who are two or more years their senior, show evidences of social immaturity. However, teachers' observations, and in the case of several studies, the answers of the children themselves to questionnaires, show that there is a definite tendency for gifted children to prefer older companions, or those equal to them in mental age. In an interesting experiment conducted by Miss Ruby Hempleman of Detroit, who for two years has had an experimental group composed of both 'X' and 'Z' pupils, it was demonstrated that on every occasion and for every undertaking, when the pupils were left to choose their own partners, the group separated itself most strikingly into pairs of similar mental age and I.Q. Numerous instances of this sort may lead us to wonder if, where administrative obstacles make it impossible to group gifted children together, accelerating those who are physically sound would not, contrary to popular opinion, result in increasing their happiness and improving their general attitude toward school instead of operating against it.

There is at hand sufficient experimental evidence to show that superior children mingle easily with other children, and as a rule show little difficulty in adjusting themselves either to an older or to a younger group. There are, no doubt, gifted children who are egotistical, or absorbed in books to the exclusion of all other interests, or unsympathetic with associates of lesser abilities, but any sweeping statements to the effect that gifted children as a class possess undesirable social traits are unwarranted, because based upon conspicuous individual exceptions.

As further evidence of the ability of the gifted to adjust themselves to their associates, the teachers who answered our questionnaire almost universally reported that these pupils are popular on the school grounds, and that as a group they are more frequently chosen by their fellows for positions of responsibility than are normal children. Several studies by Coy, Terman, and others have shown that pupils who have been accelerated a year or more beyond their chronological age display a healthy interest in the same games, in the same type of out-of-door activities, extra-school occupations, and in things generally, that their older classmates do.

It is a very common thing for teachers who are enumerating outstanding characteristics of a gifted group to put high on the list ''an interest in people'' or ''skill in managing people,'' or ''a high degree of leadership.'' Mention is frequently made of their success as 'traffic' and 'police' officers, as class leaders, baseball captains, scout leaders, and the like.

Teachers should be warned, however, against the false assumption that the only indications of leadership are those evidenced by social adaptability. Leadership may take many forms other than the ability to attract and influence people. It may eventually be revealed in the development of new formulae in the laboratory, the invention of apparatus, the discovery of scientific laws, or unusual attainment in literary fields. The sooner our schools come to realize their responsibility in fostering and developing leadership in all its various aspects, the sooner will society reap the fullest benefit from its potential genius.

Dr. Yates[5] describes an interesting case in point: ''Two high-school boys that I came across deliberately avoided positions of leadership, though they were much criticized by their teachers for so doing. They are both remarkable boys and it is not improbable that one of them at least will one day make some real contribution to science, which is the field that interests him most deeply. 'It would waste my time to go on with debating,' he said, 'for there are many things I must find out.' Is not such a pupil best left in peace to develop his abilities without undue distraction?''

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[5] From an address ''Impressions from two years spent in testing gifted children,'' by Dr. Dorothy Yates, published in the San Jose State Teachers College Bulletin, May 1922.

Closely related to a pupil's qualities of social leadership is his attitude toward his classmates and others in the school. It seems hardly necessary any longer to speak of the salutary effects of segregation upon the attitude of gifted pupils toward their own competence and attainments. Our respondents almost universally report that the attitude of pupils who have shown tendencies toward egotism, snobbishness, and an over-bearing sense of importance changes when they are placed in competition with those whose capacity is equal or superior to their own. Miss Genevieve Coy, who has made careful study of a class of gifted children, states that in her experience she has never known a gifted child to become egotistical as a result of segregation unless his teacher or his parents encouraged him in it! On the other hand, it seems generally to be the observation of teachers that the less gifted the child is, the more prone he is to develop egotism and an objectionable attitude toward others. Not infrequently it is the average child of average parents, improperly placed in the gifted group, who displays a tendency toward conceit. Whenever these undesirable traits are displayed, the teacher and the parents can skillfully bring social pressure to bear in suppressing them.

IV. MENTAL TRAITS

To speak of the mental superiority of a group of gifted children is perhaps sufficient to distinguish them for purposes of classification from their less fortunate fellows, but there are certain ways in which their superiority manifests itself that should be of special interest and importance to teachers. These characteristics may readily be grouped under a few main headings.

Most frequently mentioned, and most easily observed, is what may be termed their brilliance, or *ease of assimilation* and, as a rule, their quick reaction time—their ability to absorb the same amount of material in a fraction of the time required by a normal group.

They are further distinguished for their *power of sustained attention,* their mental endurance, and their tenacity of purpose. Root, in a series of tests of various types of mental attributes, found a group of superior children to be decidedly above the normal in 'stick-to-it-iveness'' and ability to persist in the task at hand.

Another mental characteristic which distinguishes them is their *intellectual curiosity and initiative.* They seem almost without exception to be of an investigatory turn of mind, to take the initiative in any intellectual undertaking, and to be possessed of an omnivorous appetite for learning. Another observation by Miss Hempleman seems to bring out this characteristic very strikingly. On the occasion of a field trip when she had taken her pupils into the country to observe various phenomena in connection with their nature study, when the children were called together in a group to observe some object or to listen to the teacher's explanation, the pupils on their own initiative grouped themselves about her in three more or less distinct rings. The inside ring, or the one closest to her was composed of the X, or bright, children; beyond them were the Y, or average, children; on the outskirts of the group were those of the Z, or dull, pupils who had not wandered off in some other direction!

The ability to generalize is another common trait of the group. They are logical, quick to grasp underlying principles, to observe and associate similarities, and to foresee results.

A gifted group is further characterized by *broad-mindedness,* tolerance, and a detached, impersonal attitude toward problems.

The gifted seem particularly competent in *self-criticism.* The ability ''to know when they do not know'' is often well-developed. Root found this trait very pronounced among conspicuously superior children. He states that in many cases there is an adult attitude of self-criticism and criticism of others.

As a group, the gifted are also more *imaginative,* they possess a keener *sense of humor,* and are especially gifted in *linguistic attainments.*

Contrary to the once prevalent idea that mental superiority manifests itself almost exclusively in an inordinate interest in reading, investigations are strikingly in agreement on the *versatility and vitality of interests* found among gifted children. A gifted child is not interested in one, but many things. His range of interests includes science, manual arts, nature study, sports, music, drawing, mechanical devices, politics,—in short, it runs the whole gamut of human endeavors and activities.

Closely allied to their wide range of interests is the degree of *special talent* found among gifted children. As yet, there has been no extensive investigation by means of objective measurements to determine the relation of special talent to superior intelligence, but the teachers replying to us are in striking agreement with respect to a few types of special abilities.

In *music,* mentally superior children seem as a group to be more competent in the theory and technical aspects of the subject, though not necessarily in the matter of performance. Some teachers and music supervisors report, however, that there are fewer monotones among the gifted children than among normal and dull children, and that their sense of musical appreciation is greater. It does not follow, however, that we should look to the intellectually gifted children exclusively for our future musical prodigies.

In *drawing,* there seems to be a slight tendency to rate gifted pupils higher than normal children, but this again may be based largely upon their intellectual appreciation of the art—their ability to grasp the laws underlying perspective, proportion, and other theoretical aspects of the art, and their ability to make and adapt materials more cleverly to their own ends—rather than upon any superior innate ability of graphic representation.

Teachers are almost unanimous in reporting that gifted children are decidedly superior in their power *to write and dramatize stories.* This skill is, of course, closely related to what appears to be an almost universal characteristic of gifted children—their desire to talk, or express themselves, and their ready grasp of the more complex forms of verbal expression.

Teachers seem about equally divided in their ratings of the *mechanical ability* of gifted children, altho a few report that their children are more interested than normal children in experimenting and investigating. Miss Engel, of Detroit, reports that of 105 boys in classes for superior children who were given the Stenquist Test of Mechanical Aptitude, only four were below the average for their age. Of the three classes tested, the average for each was above the 80th percentile. This outcome is of peculiar significance in connection with the common notion that intellectually gifted children show a conspicuous lack of mechanical aptitude.

V. MORAL TRAITS

Those who have been in close contact with gifted children frequently refer to their superior moral traits. Scientific measurements are, perhaps, not yet developed to the point where we can judge character surely and objectively,[6] but there is doubtless some real foundation for the assertion that gifted children usually conform more readily to the moral and ethical standards of society, since the trait is so frequently mentioned as being characteristic of them. Root, for instance, says that as a group they are ''traditional and orthodox,'' that they are ''good conformists.'' Teachers frequently refer to their ''higher standards,'' their ''truthfulness,'' their ''ability to govern themselves,'' to ''assume responsibility,'' to ''respect the rights of others.'' They speak of less cheating and copying, less tale bearing.

One teacher cites an illustrative case which arose when both a dull and a gifted child were found with pencils that did not belong to them. She handled the situation in an identical manner with the two children, explaining that they had no right to the property of others without the owner's consent. In the case of the gifted child, this single correction was enough. The offense was never repeated and the child took the trouble later to call attention to the fact that he was thereafter using his own pencil. In the case of the dull child, the offense was repeated on the afternoon of the same day. He was spoken to again, more forcibly. The following day, the same action was repeated for the third time. It was only after a severe session that the dull child was brought to the point where he no longer took the pencils that belonged to other children. This difference between the two children in responding to moral training may, or course, be attributed directly to the difference in their levels of intelligence and not to an innate superior sense of right and wrong as such. The dull child forgot from one time to the next what he had been told not to do. The gifted child probably had reasoned, on other occasions in his experience, if not in this particular one, that ''honesty is the best policy,'' that it pays to listen to those who are in authority. In short, he was profiting in the light of his past experience—one criterion of intelligence frequently set up.

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[6] Several plans for measuring moral traits by objective methods are described by Terman elsewhere in this volume.

In several of our reports from classes for gifted children the teachers mention the absence of boy and girl 'crushes.' Mudge,[7] in a study of the adolescence of superior girls, says: ''The premature love affairs of early adolescence appear to be more common among girls of average mentality or below than among the girls who later go to college. . . . They like boys and enjoy playing their games with them, but do not share in the sentimentalizing of many of their girl friends.'' Miss Ruby Johnson, of Omaha, in commenting upon boy and girl crushes in her classes, makes the following statements which seem significant in explaining their absence: ''The following reasons seem to help in accounting for this desirable lack: (1) the children came from many different schools and met here, in most cases, strangers; (2) the spirit of the room was so entirely free, open, and above-board, that there was no incentive to establish any secret understandings, bred by note-writing and the like; (3) the children's minds were so fully occupied with things they enjoyed, that they were not driven by boredom to fill their minds with trash or nonsense.''

VI. PEDAGOGICAL IMPLICATIONS

A combination of intellectual, moral, and social traits such as those just reviewed must have some very significant pedagogical implications.

An interested, alert group of pupils, if they are kept occupied with material suited to their capacities, is likely to show a very commendable attitude toward schoolwork and to afford little or no difficulty in disciplining. This seems generally to be the case. Teachers testify that gifted children obey rules with less urging, that very little 'police duty' is necessary, that *the problem of discipline disappears* with the segregation of gifted pupils, that in comparison with normal children, they are more sensitive to criticism and more susceptible to correction. By way of example, a Detroit teacher states that the remark, ''Refined people do not chew gum in public,'' made once to a group of gifted pupils was sufficient, while in a class composed of normal children, exposed to the same suggestion, no fewer than fifteen pupils in the period of one week were asked to remove gum from their mouths! One not familiar with classroom procedure in a gifted room, however, should not be mislead by these statements into believing that the order in a class of gifted children is of that old-fashioned variety where the dropping of a pin can be heard at any time. A gifted class, properly conducted, will be characterized by much purposeful activity and freedom of action.

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[7] Mudge, E. L. ''The superior girl in early adolescence.'' *Ped. Sem.*, 30: March, 1923, 45-7.

The attitude of gifted pupils toward their work and their *habits of study* are in the main conspicuously excellent. Typical responses of teachers relating to this phase of their work are: ''Gifted children never ask, 'What shall we do now?;' '' ''If one says to a class of gifted children, 'In the Survey you will find an article on coal,' they immediately want to read it, and are soon planning who shall be next in turn to read it;'' ''The particular delight of a gifted child is to surprise the teacher with some unexpected bit of skill;'' ''Pupils show self-confidence and pure delight in work;'' ''Gifted children desire difficult work and usually exceed the requirements laid down for them.''

Notwithstanding the favorable reports from teachers concerning the habits of study of gifted children, they not infrequently mention *habits of indolence and inaccuracy*, especially in children who are new to the group. While the lazy gifted child is the exception, it would scarcely be an exaggeration to say that there is one in almost every room. Reasons for this are easily found. As a rule, gifted children who have not been segregated are not required, or even expected, to do work commensurate with their capacities. To 'get by' with as little exertion as possible is after all human nature, and since these pupils have never felt the need for application of real effort, it is only natural that they should slip into habits of carelessness and indifference.

A very striking case of this type is described by Arthur W. Kallom in the September issue of *School and Society.* A twelve-year-old boy in the lowest of seven seventh-grade groups made a noticeably high score on a group intelligence test. Although his teacher maintained that the boy was very dull in his work, a Binet examination showed an I.Q. of 123. An interview with the boy revealed the fact that he had been 'putting it over' on his teachers since he had entered the fourth grade, and for the past three years had studiously been posing as a dull boy! This is no doubt an extreme case, and yet similar instances have been reported elsewhere.

A large percentage of those gifted children who have been the occasion of articles on the psychopathic child are children who display laziness and an indifference toward reaching a level of attainment commensurate with their capacity. It is significant to note that cases of indolent gifted children appear to become more numerous as one follows them into the upper grades. This fact, coupled with the almost universal opinion of teachers that, as a group, pupils' habits of industry and methods of study show a distinct improvement as a result of segregation, should have a significant bearing upon the organization of classes in the very early elementary grades. It would seem, we mean, that *the earlier in his school career we provide for the gifted child in the light of his superior capacities, the more successful will his career be, and the less time will he waste in developing undesirable habits which must later be unlearned.*

This importance of early training in habits of study for the gifted is further brought out by Miss Hempleman when she states, in speaking of a group of superior primary grade pupils: ''From the data obtained it was concluded that much that is inhibitive to the fullest development of children results from restricting them to a pace and scope of activity identical with those of their ordinary classmates, and from teaching them by methods obviously adapted to a child of average ability. . . . When new material was provided them, the children followed the old teacher-directed path and wrote the word five times or mumbled the arithmetic formula to themselves, merely because they felt it to be the thing to do. There was no outward manifestation of use being made of any of the valuable mental characteristics warranted by their intelligence quotients. Only here and there, on informal occasions, were remarks dropped which led us to believe that the children were really able to apply their superior powers of observation, association, judgment and reasoning in order to make more adequate response to some new situation.''

Their educational ambition and their wealth of incidentally acquired knowledge contribute to the pleasure of teaching a class of gifted children. All investigators and all our respondents agree that *the gifted are well-informed and well-read beyond their years,* that a high percentage of them are planning to go to college, many of them to enter some profession, and that, as a result of their superior intellectual curiosity, they are well-versed in many subjects. As one teacher expresses it, ''try as one may, it is well-nigh impossible to put a superior child in a situation with which he does not have some unexpected degree of familiarity.''

Because of their superior background as well as their superior mental endowment, *it is extremely important that we guard against the danger of carrying over into a class for gifted children the old methodology and curriculum-content of the regular course of study,* at best ill-suited to the needs of superior children and increasingly more so, once segregation has been effected. A teacher of a gifted group must bear in mind the differences in mental make-up between superior and normal children. In the first place, the tendency of gifted children is to grasp the central thought or principle and to subordinate the details to it with little assistance from the teacher. It is also of importance that the teacher remember that gifted pupils can acquire the same amount of material in a much shorter time than normal children, that they seldom have to be told a thing twice —indeed, that they more often anticipate an explanation before it is completed. For these reasons, a skillful teacher will reduce the amount of detailed explanation, thereby sparing her pupils the boredom and distaste for the work that is likely to result if she is not keen enough to sense when she has said enough.

It follows from this that *the amount of drill that is given should be drastically reduced;* fifty percent of that given in the regular grades is an average estimate. That it should be necessary to mention this important modification in procedure to intelligent teachers seems almost preposterous; yet it gives us pause when we encounter a teacher who, in response to the query: "How do your classroom methods differ from those of the average room?" replies confidently: "We give them *more drill* (*which they hate!*") (italics ours). It is apparently necessary to point out to some that there is an important distinction between securing accuracy in fundamental principles, and in harassing a child into learning all the multitude of details that a gifted child is likely to discover in his study of a given subject. We should perhaps warn some teachers of gifted children that in their zeal to impress accuracy and attention to detail upon their pupils, they should not neglect the development of that more fundamental skill, the ability to separate the essential from the non-essential, and to weigh and retain facts according to their importance. In this connection it is pertinent to quote certain statements of Dr. Yates in speaking of the over-conscientious bright child. This type of child (usually a girl) is one "whose marked ability is often concealed and hampered by excessive industry and over-scrupulousness. Petty requirements and the drudgery of routine are allowed to obscure the larger aims of study. Such misplaced emphasis may form bad mental habits that persist through life." Does it not behoove us to watch more carefully lest our gifted children suffer from the inadequate understanding of incompetent teachers?

A further departure from regular classroom procedure which is called for by the mental traits of gifted children is a *change in the amount of responsibility shared by the pupils and the teacher.* It is not an uncommon thing for a class of gifted children to conduct an occasional period successfully with almost no guidance by the teacher. Indeed, *pupil-teaching* is one of the devices most frequently mentioned as a means of developing initiative and a sense of responsibility in gifted children, and this device has been used with marked success even in the first grade. Their superior mentality, their powers of self-criticism, their ability to pick out the essential points in a discussion, and their enthusiasm enable gifted children to conduct a recitation almost independently of a teacher.

Another way in which the teacher will find a gifted group very different from a normal group is in the versatility of their interests and the *greater number of self-initiated projects and activities.* Another phase of the experiment conducted by Miss Hempleman, which has been referred to earlier in this chapter, was to keep careful check on the various types of pupil response in the room. There were six types of response noted: (1) Initiating, (2) Self-judgment, (3) Self-direction, (4) Co-operation, (5) Purposing, (6) General class contribution. A comparison of the results of the dull and the gifted children showed that "the gifted group was responsible for 96 percent of the initiating, 80 percent of the evidences of self-judgment, 82 percent of all the self-direction, 61 percent of the instances when co-operation was manifested, 96 percent of the 'purposing,' and 84 percent of all the general class contribution, or what might be termed 'recitation.' " If this may be taken as a fair estimate of the amount of class activity that a group of gifted children will display, it serves well to indicate what should be the alertness of their teacher and the range of her adaptability.

VII. Suggestions for Developing Desirable Traits

Replies to the questionnaire sent out by the writer and referred to earlier in this chapter, included numerous practical and helpful suggestions for developing certain types of desirable traits in children of mental superiority. These suggestions may be arranged in five general groups.

1. *Added social responsibilities.* The first group is composed of types of activities that are in the nature of added social responsibilities.

Many classes for gifted children have organized, under various names, civic leagues, or clubs, which are conducted by the children themselves—in many instances, according to parliamentary procedure. The purpose common to all these clubs is to give the children an opportunity to develop the kind of leadership that this type of activity demands, and to furnish social contacts of a sort that more nearly approximate community life than do the more common types of classroom activities. In many instances, particularly in the upper grades, these organizations are virtually a self-governing body for the class or school as a whole. In other instances, their functions are restricted to those of an 'interest club' in which the children assemble for programs or instructional gatherings devoted to topics of special interest to them.

Another type of activity frequently mentioned is 'police patrol.' The pupils are in charge of assemblies, they escort younger children across dangerous street crossings, they keep order in the halls during recess and noon periods, they supervise the play grounds, they act as leaders and 'safety officers' on class excursions, and in general look after the welfare of themselves and their classmates.

Athletic leadership is, of course, another type of activity belonging to this group. Pupils serve as captains of teams (although when serving in this capacity they have usually been elected to office); they act as game leaders, managers of teams, custodians, and the like.

Often reported is the organization of committees whose functions are various. There are committees for keeping order, for looking after the library books, for maintaining order and neatness in the classroom, for inspecting the health habits of the class, for providing flowers and suitable decorations for the room, for handling various funds (as, for example, milk money and thrift contributions) and numerous similar activities.

One teacher reports that the gifted class has written a School Creed embodying the rules of the school.

In all the activities mentioned above an outlet is provided for those pupils whose bent is in the direction of mingling with, and managing others. Teachers' judgments would indicate that most mentally superior children are greatly interested and very proficient in social activities of this sort. Nearly all these suggestions may be practiced, at least in part, from the first grade up.

2. *Added academic responsibilities and academic freedom.* Most frequently mentioned in this group is the practice of *pupil-teaching.* This type of activity may range from pupil reports and 'lectures' given before the class to the actual conducting of recitations by the pupils with little or no assistance from the teacher.

The organization of *research committees* to develop more fully certain problems bearing upon the topics of class discussion is another form of responsibility frequently practiced. The duties of these committees are to review additional supplementary material and present it to the class in the form of special reports.

A number of gifted classes also formulate their own *standards of class achievement.* Miss Diamond, in charge of a gifted class of 6th- and 8th-grade pupils in St. Paul, reports that in her room different groups of children have been asked to plan the work to be accomplished in a subject during a given period of time, to suggest the best methods of accomplishing the task, to work out interesting features, and to test results. One or two teachers report that their pupils mark each other's papers and offer criticisms of the work of individual pupils and of the class as a whole.

Most teachers state that they allow a wider range of *freedom in the choice of topics* for classroom discussion than is permitted children in the regular grade rooms.

The *school paper* is a common device for developing intellectual leadership in a class. Nearly all classes of gifted children above the third or fourth grade issue some sort of periodical or annual publication which affords an incentive for the development of ability in original stories, verses, and the like, and in elementary business management.

Other devices for fostering histrionic ability are the more common debating societies, dramatic clubs, and class programs.

3. *Systems of honors and rewards.* A few schools report that they offer medals for superior achievement, and about an equal number report that they have organized study clubs and honor societies whose membership is restricted to those pupils who reach a certain standard of achievement.

4. *Lessons from biography.* A number of teachers report that they have found lessons from biography useful in helping to modify character traits. Particularly in those grades where the children are still in the stages of hero worship is it possible to bring to notice great and admirable characters in history whom the children may emulate.

5. *Hobbies and special interests.* Opportunities, both inside and outside of the classroom to exploit special interests, furnish an incentive for the development of certain aspects of leadership. Singing in a glee club, playing in an orchestra, or making col-

lections of specimens (insects, soils, rocks, etc.) are examples of this type of activity.

A suggestive, and in some respects, novel plan for capitalizing the special interests of gifted children has been developed in the schools of Appleton, Wisconsin, under the direction of the principal, Mr. E. J. Rohan. In this school system the children have organized a number of 'Interest Clubs' whose purpose is to provide opportunity for further development of some subject of interest to the members. There are, for example, the Forestry Club, the Nursing Club, the Radio Club, the Teachers' Club, and several others. Membership is limited to those who are interested in the particular subject which the name of the club implies. All meetings are held after school hours, and only those who are interested participate. That the clubs are a vital factor in the lives of these children is evidenced by some of the undertakings they have completed successfully. The Forestry Club, for example, was organized shortly after a very severe ice storm had demolished the trees on the school grounds. Those boys who were interested in restoring the trees formed a club, studied tree surgery, repaired the trees on the school grounds, delved deeper into the subject, took up the study of forest conservation finally making a trip to a nearby state reserve. The Teachers' Club was composed of girls who thought they might later be engaged in teaching. The club studied several elementary books in pedagogy, visited various elementary grades in session, did some practice teaching, and held regular discussions of the methods and practices used in their own classes. In a few instances the instructors for these clubs were not from the regular teaching staff of the school. For example, the instructors for the Salesmanship Club, the Radio Club, and the Auto Mechanics Club were men of the town who were regularly engaged in those occupations and sufficiently interested in the welfare of the boys and girls of their city to devote some of their time to the clubs.

VIII. SUGGESTIONS FOR COMBATING UNDESIRABLE CHARACTER TRAITS

The undesirable character traits most frequently displayed by gifted children seem to be egotism and indolence. The writer was interested in knowing how frequently the classroom teacher was confronted with either of these characteristics, what were their methods of dealing with them, and how successful they were in eradicating them.

Of the sixty or more teachers who replied to the questionnaire mentioned earlier in this chapter, over half reported that they had never been troubled with *egotism* or boasting among their pupils. Many of the remainder said that when a case of that sort did arise, the children automatically took care of it themselves, *i. e.*, the attitude could not exist long before social pressure had stamped it out. Some of the methods reported to be successful in modifying a tendency toward egotism are: (1) individual talks with the offenders, lessons from biography showing the fate of characters who had similar traits, stories from Aesop, and reference to the fault as a primitive trait which we *must* have outgrown; (2) ignoring the offender, paying no attention to his fault whatever, giving him fewer opportunities to recite, limiting his participation in class activities, giving him no commendation or praise; (3) making unfavorable comparisons of his work with others, praising others in the group for the very thing of which he boasts, showing up the offender's lines of least brilliance, comparing his work with that of others who are superior to him, and giving him an increased amount of difficult work; (4) stressing the value of mechanical and manual achievements, providing more social contacts with other children in the school, having pupils from lower grade rooms exhibit their skill to the class, particularly in the fields of music, and manual arts. A few teachers stress the necessity of avoiding any mention of superior mental rating, while one or two advise giving the mental rating and explaining to the pupil what is expected of him. Obviously, not every one of these methods can be used indiscriminately in dealing with every pupil who exhibits a tendency toward boastfulness. The cure must be suited to the personality of the individual. However, almost without exception, our teachers report that they have been successful in coping with egotism by one, or a combination of several, of the methods suggested here.

The *problem of the indolent gifted child* appears to be more difficult and gives less promise of successful solution. Almost every teacher had been confronted with the problem in one or more instances, and over half of them state that they have not always met the situation successfully. Suggestions for dealing with the problem include the following: appeals to the pupil's pride, personal talks with him, exertion of social pressure, comparison of his achievement with that of the class as a whole, individual graphs of achievement, additional work, special reports to the teacher after school hours, especial appeals to his particular interests, training in how to study, surrounding him with his more active classmates, giving small rewards and praising him highly for evidences of improvement, showing him the responsibility that is attendant upon his superior ability, refusing to accept unsatisfactory work, enlisting the co-operation of the parents, and threatening demotion.

The most significant fact brought out by the replies to this part of our questionnaire is that, with the exception of two cases, all reports of failure to bring about a change of attitude occur above the fifth grade, most of them in the intermediate grades. This may arise from some emotional disturbance associated with adolescence, or again, it may arise from the mistake of permitting gifted children to dally through the lower grades until their bad habits of study have become difficult to eradicate in the upper grades.

IX. The Exceptional Case

In the foregoing discussion we have used the phrases ''as a rule,'' ''as a group,'' or ''as a class,'' and similar qualifying expressions, quite generously, realizing that gifted children are identical with normal children at least in the one respect of 'proving the rule' by the occasional exception. As has already been pointed out, many of the erroneous opinions pertaining to the traits and characteristics of the gifted have arisen from the tendency to generalize too hastily from these exceptional cases. It would be as foolish as it is untrue to say that there are no problematic cases among children of superior mental endowment, but the contention that emotional instability, social and physical immaturity is typical of the gifted is equally foolish.

Of late, certain teachers and investigators, for example, Miss Gillingham,[9] of the Ethical Culture School of New York, have been disposed, in the light of their experience with exceptional cases, to criticise the growing tendency in our schools to segregate, accelerate, or otherwise specially provide for children of superior mental endowment. However, a careful study of these various investigations[10] leads us to two important considerations when we discuss the case of the problematic gifted child: (1) the proportion of gifted children who do not adjust themselves readily to their environment is no greater than the proportion of similar cases found among normal and dull children; and (2) the outlook for these cases is a hopeful one, since a large majority of them show improvement, frequently very marked, when their difficulties have been carefully diagnosed and prescribed for by a competent specialist.

In the light of these facts does it not follow that, instead of abolishing the policy of special provision, we should pursue it to its ultimate and logical conclusion—the careful, scientific study of every individual, an intelligent and sympathetic understanding of his difficulties, and patient over-sight and helpful guidance until his necessary adjustments have been made? As we progress toward that distant day when adequate provision will be made for every child, we shall see all our exceptional children—dull, normal, and gifted alike—come more fully into the natural heritage that is theirs.

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[9] Gillingham, Anna. ''Educating the gifted child.'' *American Review,* July-August, 1923, p. 401-412. See also, *J. of Educ. Psych.,* 10: May-June, 1919, 237-252.

[10] See Van Alstyne, Dorothy. ''A study of ten gifted children whose school progress was unsatisfactory.'' *J. of Educ. Research,* September, 1923; and Cleveland, Elizabeth. ''Some further studies of gifted children.'' *J. of Educ. Research,* 4: October, 1921, 195-9.

CHAPTER VIII

THE DEMOCRATIC IDEA AND THE EDUCATION OF GIFTED CHILDREN

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A great controversy has arisen not only in the press but in every country village over the proposal to differentiate American education on the basis of intelligence tests. The opposition may easily be dismissed by confident exponents of a new program of education as another instance of the ignorance and superstition of the average man or it may be examined more closely to discover if possible the significant sources of its strength and persistence. In the heat of such controversy it is seldom unwise to turn away from the central matter of dispute for a moment in order to discover the underlying principles to which parties in the dispute will agree. No one can fail to notice that this particular controversy arouses an emotional attitude as soon as it is presented. The presence of emotion can but obscure the issue and thus breed further emotion. The vicious circle once established seems likely to prevail. It is the part of a good judge to look upon the emotion itself as a part of the evidence—evidence presented by both parties. Like most emotional reactions this is probably based on misunderstanding.

Although the misunderstandings may be many, there are two common ones which deserve careful study. The first of these is the popular distortion of the idea of democracy. This misunderstanding is by no means confined to the untutored, but is often found in high places; and the friends of the new educational program misinterpret democracy as often as do those who oppose it. The second source of disagreement is concerned with the methods proposed for carrying the new plan into effect. A hasty conclusion that gifted children should be taken aside and given an education of a peculiar kind is bound to arouse hostility because so many people look upon the graded school as an indispensable instrument of democracy. The graded school seems to them to give each child an equal chance with all the others and there is a vague, though substantial discernment that each must be given an equal opportunity in a truly democratic society.

The typical introduction which the plain man gets to the theory of educational classification on the basis of the intelligence tests is in some such form as follows. He is told that the declaration of a democracy that men are born free and equal is a particularly indefensible form of pious sentiment—that we have now discovered that men differ greatly among themselves—that a new instrument in the hands of a few psychologists makes it easy to rank men in a series from high to low—that about nine-tenths of the people are so low in intelligence that they ought not to be allowed to manage their own affairs—that the value of a person is directly proportional to his position in the scale of intelligence—that the psychologists are ready and eager to undertake the task of reforming the schools and, through them, the state itself. This array of propositions sets forth nearly all the possible misunderstandings of the philosophical theory upon which our government and particularly our schools were founded. All of these statements have been made more or less frequently by the unwise expounders of the new faith and none of them may be said to stand the test of rigorous examination.

The clearest expression of the democratic philosophy of education and government is probably to be found in the works of Rousseau. Here we have the rhetorical form of political and social theory which was embodied in our public documents—the phrases around which cluster so many heated disputes. The rhetoric of the French and American revolutions may be examined almost between the covers of a single book and that book was written by the great maker of phrases—Jean Jacques Rousseau. He was, however, much more than a maker of phrases. He has paid the price of this facility in the use of words in being widely misunderstood. It is so easy to get a superficial knowledge of Rousseau that a thorough knowledge is seldom found. For instance, a well-known and very influential public speaker recently made the following statement before a large audience: "Rousseau believed that all men are born free and equal but *modern science* has revealed the falsity of this contention." The well informed student of democracy must have cried out, "In that case, a casual reading of the *Emile* would have revealed as much as modern science has. And if anyone should take the trouble to read *The Social Contract* and *The New Heloise,* he might have advanced beyond modern science." The following extract from *The New Heloise* on the question of individual differences is unambiguous.

"Even if all this premature instruction were as good for their minds as it is actually harmful, it would still be a great mistake to bestow it on all children indiscriminately and without regard to their individual differences. Apart from general human characteristics, each individual is born with a distinctive temperament which determines his genius and character. There is no question of changing or restricting this temperament, only of training it and bringing it to perfection."[1]

Such passages may be found so frequently throughout the writings of Rousseau that a sober interpretation must rest upon a careful analysis of what Rousseau meant by the phrase "free and equal." There is not the slightest evidence that he believed that men were physically, mentally, morally, economically or socially equal. What, then, do plain words mean? Rousseau was clearly postulating metaphysical freedom and equality as a basis of an intelligible social order not as a description of an actual order. This is the heart and soul of the democratic theory.

This postulate of freedom and equality was the net result of several lines of influence brought together in Rousseau's brilliant and active mind. In the first place, he was familiar with the tradition of philosophy from Descartes to Hume. In the second place, he was saturated with Plato's thought. In the third place, he was painfully conscious of the long struggle of man to escape the injustices of external restraint. The philosophical atmosphere which Rousseau breathed was charged with the political speculation of Hobbes and Locke on the one hand and the discussion of mechanism and teleology by Descartes, Spinoza, and Leibnitz on the other.

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[1] *The New Heloise*, Part V, Letter 3, Archer translation.

In 1651, in the midst of the English Reform movement, Hobbes had written: "Whatsoever, therefore, is consequent to a time of war where every man is enemy to every man, the same is consequent to the time wherein men live without other security than what their own strength and their own invention shall furnish them withal. In such condition there is no place for industry, because the fruit thereof is uncertain, and consequently no culture of the earth, no navigation nor use of the commodities that may be imported by sea, no commodious building, no instruments of moving and removing such things as require much force, no knowledge of the face of the earth; no account of time, no arts, no letters, no society, and, which is worst of all, continual fear and danger of violent death, and the life of man solitary, poor, nasty, brutish and short."[2] Hobbes goes on to argue that at such a price life is not worth what it costs and proposes justice as a basis of society in place of power. Justice is a condition secured through contracts administered by delegated power. Such a condition is made possible only by the supposition of equality before the law. Here was a political philosophy which later found embodiment in English and American institutions of government.

In continental Europe during the seventeenth century philosophical inquiry turned to consider the nature of individuality. Spinoza and Leibnitz, in particular, were defining individuality as the principle of organization in nature. Each individual thing, whether living or dead, was seen to possess its individuality in and through this principle of organization. Leibnitz set all the society folk by the ears when he announced that no two leaves could be found which were exactly alike. Among all the leaves of the forest could it possibly be that no two were alike? Similar, indeed, they were, but not identical—each one revealing some idiosyncrasy of organization—some pattern of uniqueness. The hypothesis of identical and interchangeable parts of nature was bowed out of the universe. As men became convinced that each thing, however insignificant, was an irreplaceable unit of organization, they got a new sense of value and a new respect for all things, including man. This principle of organization was called by Leibnitz the *monad* and was declared to be an active principle operating within the individual teleologically in order to realize the organization of the universe into the form of the monad. The most universal monad was called the "monad of monads." Each individual was a perfect reflection from its own peculiar angle of the supreme principle of organization. This philosophy was radically teleological, although Leibnitz did not find the purpose outside of the visible universe after the manner of the deist. The teleology was internal or immanent.

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[2] *Leviathan*, Ch. XIII.

Combine the English theory of contract as a basis of government with the continental theory of immanent teleology and we get Rousseau's doctrine of freedom and equality. The doctrine of freedom is a teleological view of human nature, *i. e.*, that in the order of nature each individual has an ultimate and inalienable right to be itself. The doctrine of equality is uttered in the same breath. Having reached this point in his thinking, Rousseau faced the question—Shall the bad man also be allowed to be himself? and answered by denying the existence in fact of bad men. Evil was introduced into the social order by unwise social provisions. We must sweep the board clear and begin anew with the education of the child and in his education we must follow nature.

If we follow nature, however, we will certainly build up a society in which justice shall prevail and thus the worth of no individual shall be sacrificed. Cast on the lurid background of his generation, the direct antithesis of justice was for Rousseau—*force.* Force challenged the right of the poor, the weak, and the ignorant; justice proclaimed that right and held out hope of realizing it.

The metaphysical postulate of freedom meant, therefore, that a just society will guarantee to each individual his right of existence. Rousseau fully appreciated the logical necessity of defining in great detail the real nature of a man and the process by which the dialectic of experience reveals that nature. This is his educational contribution. Perhaps no one now supposes that Rousseau gave a correct account of the nature of man or that his educational program was practicable, but the fact remains and is generally recognized that the logical structure of his reasoning was sound.

The metaphysical postulate of equality implies that the value of the individual person is absolute and unequivocal. This idea was later formulated by Kant in his famous dictum that justice requires that each man should be treated as an end and never as a means to some other end. It was also directly embodied in constitutional provisions for free speech and press, trial by jury, and the other institutions of representative government.

If this be a fair account of the central meaning of the phrase "*free and equal,*" it follows that democracy, more than any other form of government, is in a position to recognize individual differences. Indeed, if I mistake not, it is the only theory committed to recognize and *preserve* those differences. It holds that each individual is of infinite value because he embodies a unique interpretation of reality. It, therefore, commands mutual respect, tolerance, and reverence as the cardinal virtues of the citizen.

Moreover, all suggestions that science has proved that the democratic theory is false are based upon a gross misunderstanding of the sources of democracy. Modern science has proved nothing of the kind. Any man is at liberty to challenge the assumptions of democracy, as many in fact do challenge them. The alternative, however, is not scientific knowledge, but another set of assumptions, logically implying a totally different social order. Thus, we may deny that the weak have rights which the strong are bound to respect or that all persons are equal in value. In the last analysis, it resolves itself into a matter of temperamental preference for one type of society or the other. I am perfectly willing to express a preference for democracy and its ideals as compared with the savage reality of right based on power.

A tactical error has undoubtedly been made in suggesting that the findings of intelligence testing are anti-democratic in nature. The first assumption of democracy is that of individual differences. It is also misleading to suggest that differences in intelligence are the only or the most significant differences. There are plenty of situations within the experience of every school teacher in which a difference in family tradition, for instance, is pedagogically more significant than is a difference in mental age. The radical proposal to reconstruct education and government on the basis of differences in intelligence arouses the greatest suspicion and emotional antagonism because it implies a rejection of the Kantian metaphysics of value. This will continue to be the case until the plain man is convinced that intelligence is invariably combined with nobility and a sense of justice. As yet there is no evidence to support such a belief. In fact, the evidence is mainly to the effect that what the psychologist calls intelligence is but a form of power in the exercise of which the weak will shamelessly be used for the benefit of the strong. From this point of view and this only is the program of special educational advantages for the "superior" anti- or undemocratic.

A large part of the emotional reaction, however, is due to a confusion between a democratic education and the graded school. The story of this confusion is a long one and is mostly the story of the particular type of school organization which has grown up in America. We have come almost to identify democracy with uniformity because of the accident of school organization. Spiritually, as indicated above, the two ideas are so far from being identical that uniformity has really much more in common with the monarchial form of government than it has with the democratic. The protest of the philosophical democracy was a protest against a social order in which a man was just a member of a class and no more—just one among many—a mere thing.

From this angle the graded school has probably done more to weaken the true effect of democracy than any other American institution. If it were carried out to its logical conclusion, it would overthrow democracy completely. The first postulate of the graded school is that of homogeneity or identity. I mean that such a postulate would be fatal to democracy were it not that it is maintained for but a short period in the day or the life of an individual. Beyond the reach of its heavy hand the child seeks and finds scope for the development of his particular individuality. The home, the church, the street, and a thousand other influences coax from him his loyalties and his talents until he develops his own life and adds it to the total which brings variety, value, and humanity into an otherwise barren existence. The weakness of the graded school is its strength. Theoretically, it is an abstraction from life, but practically it never achieves complete abstraction because it is unable to secure homogeneity.

Among the several kinds of homogeneity proposed as a basis of instruction probably the graded school is founded on the least objectionable one, *i. e.*, pedagogical homogeneity. Such a homogeneity is the logical basis of instruction—that which is common is a degree of mastery in school arts. Other forms of homogeneity would not only be more objectionable from the democratic point of view but would also impede progress in the school arts. No one has perhaps proposed a school divided on the basis of height or weight or color of eyes, although these are obvious ways in which children resemble each other. They are not proposed because such a division would throw the whole process of instruction into confusion. Other bases of homogeneity, however, have been proposed and actually employed which are only slightly less abstract from the teaching problem than that of height or weight.

Probably the most ancient basis of educational selection is economic or social. From the teacher's point of view it is not a bad basis of selection, for there is a strong probability that the members of a clearly defined economic or social group have common purposes and a considerable body of common information. The weakness of this theory of school organization is to be found in its political and broadly human results. It was against this very theory that Rousseau was in rebellion. A house divided against itself cannot stand. If the school perpetuates the aristocracy of wealth, it advances the hour of revolution and social disintegration.

Another basis of school organization is that of religious affiliation. This is only slightly less productive in social and political misunderstanding than the theory of economic selection. If the story of human degradation were told, many chapters would have to be written of the degrading influence of religious warfare. Sectarianism has dragged its slimy form across the whole field of human history. It begets bigotry, intolerance, irreverence, and war.

The newest proposal as a basis of school organization is that of psychological homogeneity. This modern movement for educational selection is substantially that which Plato proposed in ancient Athens. If we have a more exact method by which we can discover the 'philosopher-king,' we are no better off than Plato was after we have discovered him. The crux of this theory is now, as it was then, a lack of evidence that the 'guardians' will cease to be moved by selfish and unjust desires. Plato supposed that the artizan class possessed one virtue, the soldier class an added virtue, and the governing class all of the virtues. This is a supposition contrary to fact. Human nature is not so simple as that. The parallel between man and society breaks down because the 'guardian' in society corresponds not merely to the head in man, but possesses the passions and appetites of men also. Similarly, the artizan has his bit of wisdom as well as his appetites. Let it be admitted, however, that the political implications of this new theory of selection are true and beneficent; it does not follow that the theory is pedagogically desirable.

Effective group teaching requires common interest and common knowledge. The economic or the religious basis is more likely to secure common interest, common loyalty, and common purpose. The traditional graded school is more likely to secure common knowledge. The educational group which satisfies both of these requirements best is the family. Here learning goes on at different levels but effectively because of common interest and common "apperceptive mass." The graded school has sacrificed the common interest in order to secure a common basis of knowledge. This was done under the influence of the Herbartian tradition. This tradition also gave hope of securing common interest through the perfection of teaching method. It still remains a fact that a good teacher can more easily dispense with common interest than he can with common knowledge. For a poor teacher both are indispensable from the beginning. Common interest, however, can quite readily be secured if one has even an elementary insight into human motives. The teacher calls out the most universal longings and devotion of the human heart and thus prepares the mind to receive the new knowledge. Neither of these requirements is guaranteed by grouping on the basis of intelligence tests. Nevertheless, there is no reason why such a grouping should not be modified by other principles in such a way as to secure a maximal degree of common interest and knowledge.

Daily contact with a school composed of children having practically the same mental age or the same intelligence quotient will convince anyone that a teacher would be mad to suppose that the school is pedagogically homogeneous. Two children having the same intelligence quotient are just as likely to present widely different pedagogical problems as any two children taken at random. It would be just as safe pedagogically to group children together according to height as according to mental age if that were the only consideration in each case. Selection on the basis of intelligence must be modified by common sense, social discretion, and a hundred other considerations which suggest themselves to any practical teacher. Carried out in the abstract and formal way in which it has sometimes been suggested, the scheme would fall of its own inherent weakness. But it will never be so carried out, for the recalcitrant nature of reality saves all our pet schemes from a *reductio ad absurdum.*

If the foregoing outline is reliable, there is nothing undemocratic in a proposal to provide education as perfectly adapted as possible to the needs of each individual. Indeed, it is hard to discover any educational program which is more in the spirit of democracy. The suspicion that the proposal is undemocratic is based upon a too narrow definition of individual differences—a definition which suggests that some individuals are *worth* more than others or that some are to use and others to be used for purposes in which they do not share.

It is also clear that the graded school is not indispensable in a democratic scheme of education. It is rather made necessary by the task of training the largest possible number with the least possible expense. It is, in fact, based upon similarity in educational achievement and no proposal has been made of a better basis of grading. Some have been proposed which would tend to erect barriers of misunderstanding between groups in society and still others which offer minor degrees of plausibility.

The modern public graded school, with all its faults, is probably the best instrument of democracy in producing a society characterized by literacy, common aspirations and loyalties, mutual toleration, and respect. It certainly admits of great improvement as increasing resources provide more teachers and more individual attention. To this end we need further study of individual differences as well as a clearer definition of the common purposes of men.

SECTION II.—SPECIAL STUDIES

CHAPTER IX

THE PHYSICAL AND MENTAL TRAITS OF GIFTED CHILDREN

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ACKNOWLEDGMENTS

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The work here summarized is the product of many hands. Dr. Truman Lee Kelley has acted as assistant director of the research and has rendered invaluable service in the treatment of data. The field work was done by Florence L. Goodenough, Helen Marshall, Dr. Dorothy Yates, Florence Fuller, and other assistants. Dr. G. M. Ruch assisted in the preparation of the general plan of the study. The character, personality, and interest tests occupied for two years the time of Mr. Vernon Cady, Mr. A. S. Raubenheimer, and Mrs. Jennie Benson Wyman. The parallel biographical study is being carried out by Catherine Cox. The medical examinations were made by Dr. Edith Bronson, of the University of California Medical School, Department of Pediatrics, and Dr. Albert H. Moore, of the Hollywood Medical Group. Dr. Bird T. Baldwin had charge of the anthropometric measurements. The writer is particularly indebted to Miss Goodenough for assistance in summarizing results.

METHODS AND SUBJECTS

The purpose of the research was to locate approximately 1,000 children of very superior intelligence (of I.Q. 140 or higher); to secure for each child extensive psychological, educational, physical, and social data; and afterward to follow the careers of the children as far as possible into adult life. It was desired to secure as nearly as possible *representative* gifted children, in order that we might have a basis for generalizations with respect to the kind and amount of deviations which such children show when compared with the general population of school children. There is reason to believe that the differences of opinion to which various investigators have been led with regard to such children have been due in part to their use of groups which were not representative of gifted children in general. As a basis for educational treatment it is obviously very important to know what physical and mental traits hold for these children as a class.

Methods were prepared and assistants trained between June 1 and September 15, 1921. Between September 15, 1921, and July 1, 1922, from four to seven field assistants canvassed the cities of Los Angeles, San Francisco, Oakland, Berkeley, and Alameda. At the same time various smaller cities were canvassed by volunteer assistants. In all about a quarter of a million school children were sifted for subjects.

More than 1,300 new subjects of the desired degree of brightness were secured, in addition to about 150 who had been located previously. About half of the 1,300 were located through the help of volunteer assistants in the public schools of the state, and by methods which were not entirely uniform.

The main experimental group of 643 cases was located by a rather rigidly uniform method of search. This group is our main reliance for determining how gifted children in general compare with unselected children of corresponding age, (1) because the data for them are more complete, and (2) because they are known to be more nearly representative of all gifted children in the school population. Our summary is therefore limited entirely to data collected for these 643 children.

This group was located in the cities of Los Angeles, San Francisco, Oakland, Berkeley, and Alameda. Grades III to VIII, inclusive, were canvassed rather thoroughly in these cities, and Grades I and II less thoroughly. The plan was to give the National Intelligence Test or Terman Group Test to four children from each classroom; namely, the youngest, and the three nominated by the teacher as brightest, second brightest, and third brightest, respectively. As it turned out, usually only two or three from a classroom were tested, because the youngest was often nominated also for brightness, and because so many classrooms were obviously lacking in children of superior ability. Children ranking high in the National Test were then given an individual examination by the Stanford-Binet. Those earning an intelligence quotient as high as 140 were included in the study, also a few testing slightly lower. The proportion qualifying was about one in two hundred. Check experiments indicated the method used probably gave us between 80 and 90 percent of all the pupils who might have qualified had the entire school population been tested. What is true of this main experimental group is therefore probably true of gifted children in general.

The following data were secured:

1. National Intelligence Test or Terman Group Test;
2. Stanford-Binet Intelligence Test;
3. Stanford Achievement Test (a two-hour educational test covering the main subjects of the pre-high-school curriculum);
4. General Information Test (covering general science, literature, history, and the arts);
5. A battery of seven 'character' tests (bearing on such traits as honesty, tendency to overstate one's ability or knowledge, moral judgment, and social attitudes);
6. An objective test of interest;
7. A test of interest in, and knowledge of, plays, games, and amusements;
8. Thirty-four anthropometric measurements (made under the direction of Professor Bird T. Baldwin, of the University of Iowa);
9. A one-hour medical examination (by trained pediatrists working under the direction of an advisory committee from the Stanford medical faculty);
10. A sixteen-page Home Information Blank, filled out by the parents, including, besides extensive data on early development and family history, ratings of child by parents on twenty-five physical, mental, and moral traits;

11. An eight-page School Information Blank, filled out by the child's teacher, including, besides data on the child's school success, ratings by the teacher on the twenty-five traits which were rated by the parents;

12. A four-page Interest Blank, filled out by the child;

13. A two-months' reading record kept by the child;

14. Ratings for about 200 of the homes, on the Whittier Scale for Home Grading.

The foregoing schedule calls for some 65 pages of test and measurement data and for some 35 pages of other information with respect to each child. For all the items except 9, 10, and 14, data have also been secured for control groups of 500 to 1000 unselected children. Obviously, only the barest sketch of our findings can be set forth here.

The distribution of the 643 cases by age and sex is as follows:

Age	Below 5	5–5.9	6–6.9	7–7.9	8–8.9	9–9.9	10–10.9	11–11.9	12–12.9	13–13.9	Total
Boys	8	11	16	27	42	62	75	59	38	13	351
Girls	6	7	19	20	43	42	54	51	36	14	292
Total	14	18	35	47	85	104	129	110	74	27	643

The small number below 8 is explained by the fact that Grades I to III were not fully covered, the small number above 12 largely by the fact that many bright children of this age have been promoted to the high school.

The intelligence quotients, corrected somewhat for the greater difficulty of the Stanford-Binet in the upper ranges, were as follows:

	Boys	Girls		Boys	Girls
200–204	0	1	165–169	15	12
195–199	0	0	160–164	27	18
190–194	0	2	155–159	31	34
185–189	1	0	150–154	86	46
180–184	7	2	145–149	75	79
175–179	2	5	140–144	80	75
170–174	11	9	135–139	16	8
			130–134	0	1
			Total	351	292
			Mean[1]	151.78	151.6
			Standard deviation	9.17	10.23

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[1] The means of the uncorrected quotients are about 4 points lower.

It will be noted that there is a marked excess of boys (122 to 100), but that the *three highest cases are girls.* Later testing of siblings of these children added 20 girls and 9 boys to the 643 cases, giving 360 boys and 312 girls, or 672 in all. This is in the proportion of 115.38 boys to 100 girls. (The standard deviation of the proportion is 1.92). In the public schools attended by these children the proportion is 104.55 boys to 100 girls.

PHYSICAL DATA

Birth and early infancy. (Data from Home Blanks and Medical Report.) No clearly evident deviation from normal was found, except one pound excess of birth weight. Fifty-two percent were breast-fed exclusively. Seventy-four percent had ''excellent'' or ''good''health during the first year, 16.6 percent ''poor'' or ''very poor'' health. Walking occurred slightly earlier than for Mead's normals, but the median age for ''first words spoken'' was for boys four months, and for girls five months, below Mead's medians for sexes combined. However, wide variability was found.

General health. (Data from Home Blanks and School Blanks.) Forty-four percent of gifted boys and thirty-four percent of gifted girls had had adenoids removed, as compared with 28 percent of control boys and 17 percent of control girls. The figures for tonsil operations showed similar differences. There is little difference between gifted and control in frequency of colds and headaches. Somewhat more of the gifted have defective vision, but the control more often have defective hearing, symptoms of general weakness, and organic disease. Eight percent of the gifted have had scarlet fever, 7 percent diphtheria and 4½ percent pneumonia. Nearly a third have suffered accidents, and nearly 8 percent have suffered bone fractures. The inference is that accidents and infectious diseases are probably less likely to jeopardize normal mental development than students of mental deficiency have generally believed.

Reports from 600 gifted show 654 surgical operations, the largest number being for adenoids and tonsils.

The gifted are less often rated as ''nervous'' than are the control. The proportion of stuttering, chorea, excessive timidity, marked fears, and tendency to worry is about the same in the two groups. Muscular twitching is slightly more common with the gifted. Daily sleep of the gifted is from 30 minutes to an hour (at different ages) in excess of the norms based on records from 2,692 unselected children.

Medical examinations. Of the 643 cases, 591 were given a one-hour examination covering several score of different items. Unfortunately, it was not possible to give the medical examinations to a control group, and the published reports of school medical examiners do not afford a very satisfactory basis of comparison because of the lack of thoroughness and objectivity in such examinations. In general, however, the examinations given to these subjects seem to indicate a rather small number of physical defects and diseased conditions.

Taking as a rough criterion typical data reported in the literature of school medical examining, these children appear to be *above the average of children in general with respect to health.* Defective hearing, nasal obstruction, decayed teeth, rickets, malnutrition, and lung symptoms, are decidedly rare. Visual defects, tics, stammering, and chorea occur in about the expected number. Only about 4 percent have pathological tonsils, which is largely accounted for by the fact that more than 50 percent have had their tonsils removed. The figures for adenoids are similar. About 10 percent have, to a ''marked degree,'' one or more of the following growth defects: fatigue posture, scoliosis, lordosis, kyphosis. About 6 percent give indications of hyperthyroidism. Heart, blood, and urine examinations disclosed few serious conditions. Metabolism tests of 94 unselected ten- and eleven-year-olds yielded 2 percent ''bad'' and 11.7 percent ''fair.'' The remainder of the 94 were average or better.

Of the 12-year-old gifted boys, 44.4 percent are pubescent (pubic hair present, but not kinky), as compared with 15.5 percent found by Crampton for unselected boys. For our boys of age 13 the proportion is 71.4 percent as compared with 27 percent of Crampton's cases. The proportion of prepubescents for the gifted is 55.6 percent at 12 years and 7.1 percent at 13. Crampton's figures for the same ages are 75 percent and 48 percent. In the case of the girls, the following figures for menstruation were found for those who had reached various ages:

Age reached when examined	10	11	12	13	14	15
No. cases	179	136	89	50	12	3
Percent menstruated	1.1	8.9	38.2	72	66.7	66.7

Anthropometric measurements. These show a superiority of the gifted group over Baldwin's unselected cases, in most of the 34 measurements taken, but at this writing the data have not been fully summarized.

CHARACTER AND PERSONALITY TESTS

It seemed so desirable to have objective data on character and personality traits that we have devoted a considerable proportion of our time to this division of the research. The tests given and the general trend of results are indicated in the following paragraphs.

1. *Overstatement test* (Raubenheimer-Ruch). (a) The children were asked to check the books they had read in a list of fifty titles. Twenty of them were 'faked.' (b) Eighty questions were given of the form: "Do you know who discovered America?" The directions were: "If you know it *very well* mark it 2; if you know it fairly well, mark it 1; if you know nothing about it, mark it zero." Later, in test B, eighty check questions were asked, of the form: "America was discovered by Balboa, Columbus, Washington, Drake." These may be considered tests of conceit, or of honesty of report. A control group of 533 children was tested. The results showed in both tests slightly better scores for the gifted of both sexes and at all ages.

2. *Raubenheimer test of questionable interests (books).* In each of two exercises, 10 fictitious book titles were arranged in order by each subject to indicate which he would most like to read, which next, etc. The titles ranged from those suggesting very questionable

content to those of the most innocent and wholesome type. A 'true' rank order for wholesomeness had previously been determined on the basis of adult judgments. Sample titles are (unwholesome) "Dick Jones, his gang, and the cops;" (wholesome) "The scout that saved his camp." The results showed 74 percent of the gifted above the median of the control group.

3. *Raubenheimer test of questionable interests (companions).* This test was similar to No. 2 above, except that eight brief descriptions of children were used instead of book titles. These were to be ranked to show order of preference for the hypothetical children as 'chums.' Two samples follow:

(Unwholesome) "*Brick* is fifteen years old and is a real dare-devil. He does not care much for school work, and wants to get out. He often goes off with the circus and gets around by picking up rides. He thinks he will get right away now, if he can only find a chum to go with him."

(Wholesome) "*Dick* joined the Boy Scouts as soon as he was old enough. He did not like it at first; the drills and the rules were hard. Now he is a troop leader and is planning a camp in the mountains next summer."

Results showed 81.3 percent of the gifted above the median of the control.

4. *Raubenheimer test of social attitudes.* In 24 items like the following the subject was asked to mark the line which showed most nearly how he felt about the person or thing in question:

Policemen
......They have it in for the kids.
......They are glad to help you out.
......It is fun to fool them.
......They are just big bluffs.

The results showed 90.1 percent of the gifted above the median for the control.

5. *Voelker-Cady test of conscientiousness.* The children, in groups, were given a large sheet of paper containing circles of various sizes. The task was to note the location of the circles and then to close the eyes and make a cross in each circle. In another test rectangular lines were to be traced with the eyes shut. In neither test is much success possible without 'peeping.' As the tests are

given, temptation to disobey instructions is fairly strong, especially as the subjects are purposely not closely watched during the performance. Results showed the gifted *far above the control* at all ages.

6. *Woodworth-Cady test of emotional instability.* This test was Cady's modification of the question list devised by Woodworth as a test of psychopathic tendencies in soldiers. The Cady revision is especially adapted to school children. Exactly 75 percent of the gifted secured better scores than the median of the control group.

7. *The Wyman test of interest.* Words were selected which yield, when used as a free association test, responses that can be scored to show the relative and absolute strength of interests along intellectual, social, and activity lines. The stimulus words chosen are of the 'balanced' type, in the sense that each of them readily provokes associations in any of the three directions. It was devised to find whether the gifted child's interests were either relatively or absolutely weak along social and activity lines. *Gifted children show a more vivid and intense interest in all three lines than do unselected children of corresponding age;* in other words, the development of intellectual interests has not brought about an atrophy of social and activity interests.

All of these tests rate from fair to excellent in reliability and have been demonstrated to have considerable validity. Besides being given to the control group, all but the last named have been given to delinquents, to school incorrigibles, and to special groups selected as showing outstanding excellence of character traits.

8. *Test of interest in, and knowledge of, plays, games, and amusements.* The subjects rated 90 play activities with respect to their interest in them, their knowledge of them, and the time devoted to them. Then followed an information test on plays and games. The analysis of results involved the use of masculinity indices, maturity indices, and indices of sociability and activity as regards play interests. Masculinity indices of gifted and control groups (sexes taken separately) show no significant difference. The maturity indices are from one to two years higher for the gifted than for the control, and are somewhat higher for boys than for girls. The gifted are somewhat less interested than the control

pupils in the more active plays and somewhat more interested in intellectual and sedentary games. The gifted excel greatly in all kinds of play information, although they devote a little less time to play than do children of the control group.

9. *Trait ratings.* Both gifted and control were rated by parents and teachers on twenty-five physical, mental, moral, and character traits. The gifted are rated somewhat higher by teachers than by parents on about half the traits, but lower on a few. Both on parent and teacher ratings the gifted excel the control at all ages in mean ratings on most of the traits, especially in "general intelligence," "desire to know," "originality," "will power," "perseverance," "desire to excel," "sense of humor," and "common sense." Gifted girls are rated higher than gifted boys on a majority of the traits, and their ratings more often improve with age. The control girls, on the other hand, are not rated significantly higher than control boys. Parents and teachers agree closely with respect to the traits which are rated highest and lowest (rank order correlation, .75). Other correlations show that intelligence far outweighs sex in determining the traits in which a child will be rated high or low.

We believe that the results of this division of our study, especially of the Raubenheimer-Cady-Wyman tests, have an important bearing on the educational treatment of gifted children. They strongly suggest that *the danger of over-intellectualization at the expense of normal development along social and moral lines is probably much less than some have believed it to be.*

HEREDITY AND SOCIAL STATUS

Racial origin. There is marked excess of English, Scotch, and Jewish parentage. A tenth of our main group are Jewish, as compared with about 5 percent in the general population of these cities. The proportion of Mexican, Spanish, Italian, Portuguese, and Negro origin is very low. Only 26.3 percent of the American-born parents of gifted were born in the country or in towns of less than 1000. The corresponding figure for grandparents was also low, 28.8 percent.

Occupational, social, and economic status of parents. By the Barr scale of occupational intelligence, the average parent of the gifted rates about on a par with a "librarian," while the average adult male of the same cities had a computed occupational index on a par with that of a "metal finisher," "baker," or "plasterer."

The median family income, based on reports for 182 families, who may be taken as fairly representative of our group, was about $3200. A fourth were above $5200 and a fourth below $2100. Eight were below $1500 and one below $500.

Ratings of 192 gifted homes on the Whittier Scale for home grading show home conditions "superior," and especially superior on the item "parental supervision." On the other hand, ratings of the neighborhoods in which gifted homes were located shows that the neighborhood surroundings of the average gifted child are less superior than his home. Teachers report 85 percent of gifted and 61.8 percent of control as having favorable home environment. About 16 percent of the gifted boys had paid employment outside the home. The pay ranged from trifling sums to $400 a week!

Parents were divorced in 5.4 percent of cases and separated in 1.9 percent additional cases, showing little difference in this respect from the general population in the cities covered.

Physical heredity. A history of insanity was found by the medical examiners for .4 percent of parents and .3 percent of grandparents. More than a third of these cases were found in 1.6 percent of the families. One sibling and 10 other relatives were feeble-minded, but no case of feeble-mindedness was found in the direct line. Nineteen epileptic relatives were reported, including one case among siblings but none among parents. One sibling and one parent had had chorea. Cancer was recorded in the case of 4 parents and 38 grandparents or great-grandfathers. A longevity index calculated for grandfathers gave an excess longevity of 2.35 years as compared with the general population. In general, the physical heredity of these children appears to be above the average.

Size of families. There were 92 families which could be reckoned as "complete." In these the number of pregnancies had averaged 3.85 per mother. The number of living children averaged 2.82. There had been 44 deaths, and 46 miscarriages (of which 6 were admittedly induced). The deaths which have occurred under the age of five years in these families represent a mortality of 11.9 percent for boys and 5.5 percent for girls, as compared with 17.03 percent for boys and 14.65 percent for girls in the general population.

Age of parents. The mean age of father at birth of gifted children was 33.66 years; of mothers, 29.01 years. A quarter of the mothers and 10 percent of the fathers were under 25 years.

Mental heredity. We have already noted the relative freedom of these families from mental defect. That they represent an intellectually superior stock is shown by such facts as the following: Of the 62 members of the Hall of Fame, 14, or 22.58 percent, are known to be related to one or more of our 643 children. Known relatives of gifted listed in *Who's Who* number 43. Other relatives of sufficient distinction to be listed in biographical dictionaries number nearly a hundred, including five "signers."

Our 643 subjects are furnished by 576 families. As we have already noted, later testing of 75 additional siblings in these families brought to light 29 new cases who reached our standards. This makes 672 cases in the 576 families, with many siblings not tested. Three families have furnished four subjects each and one five!

Intellectual heredity is also indicated by the education of parents and grandparents. The mean amount of schooling for fathers is 12 grades completed; of mothers, almost 12 grades; of grandfathers, 10.8 grades; of grandmothers, 9.6 grades. More than a fourth of our gifted have at least one parent who holds a degree from a college or university of recognized standing.

THE CHILDHOOD OF GENIUS

For two years we have been running a parallel biographical study of the early mental traits of the most eminent men and women of modern times. The work is being carried on by Miss Catherine Cox. We have selected for study 300 representative cases from Cattell's list of the 1000 most eminent individuals of history. Information is being sought especially along such lines as heredity, social status, rate of school progress, quality of school work as indicated by marks and honors; ability as shown by letters, compositions or poems (which will be rated against typical letters, compositions and poems written by unselected school children); breadth of interests; comparison of early interests with later performance; indications of special mental disabilities; environmental factors that may have influenced mental achievement, etc. At this date the work is not complete, but it has progressed far enough to show that our 300 eminent individuals will offer many interesting parallels to what we find frequently among our 643 children. *The data will show the falsity of the traditional view that many geniuses as children were mentally slow.*

The educational achievements of our 643 gifted children are summarized in the chapter which follows.

CHAPTER X

THE EDUCATIONAL ACHIEVEMENTS OF GIFTED CHILDREN

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This chapter deals with the educational achievement of the 643 gifted children with whom we were concerned in the preceding chapter. Part I, by Terman, gives a general summary of their educational achievement; Part II, by De Voss, describes the treatment to which the achievement test data are being subjected in the analysis of special school abilities.

PART I. GENERAL SUMMARY

Progress through the grades. The typical child of 140 I.Q. or higher enters school at 6¼ years and enrolls in the high first grade, although some enroll at once in the second or third. There is hardly any likelihood of his being required to repeat a grade, and not much likelihood of his being allowed to skip more than three or four half grades. The average progress quotient for our entire group is 114, which here means that the typical gifted child is accelerated in school 14 percent of his age beyond the norm for the cities in which they attend (*e. g.*, 1.4 grades in the case of the ten-year-old). In mental age, however, they average 48 percent above the norm.[1] The difference between 48 percent and 14 percent is 34 percent. On the face of it, one might say that the typical gifted child is under-promoted to the extent of 34 percent of his age. It is, of course, conceivable that considerations having to do with social training justify a certain amount of such under-promotion, but as far as *ability to accomplish* is concerned, it will be shown that our data prove some two-thirds of this under-promotion to be unjustified.

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[1] Or 51 percent above the norm when the "corrected" I.Q. is used. See Ch. IX.

Achievement tests. The foregoing conclusion is based upon the results of Stanford Achievement Test scores. This test was given in its published form in the case of reading, arithmetic, language usage and spelling, but the usual tests in nature study, science, history, and literature were replaced by a much more thoroughgoing test of the same kind. The probable errors of the scores on the several tests in this battery are all exceedingly low, and the composite score, therefore, offers a very accurate index of all-round educational achievement. We will consider first the tests of reading, arithmetic, language usage, and spelling.

The mean subject quotient was computed for each of the above four subjects, separately by age and sex. These means ranged chiefly between 130 and 150. The mean of the age means for reading is 144; for arithmetic, 136; for spelling, 139; for language usage, 146. The mean educational quotient is above 135. *That is, the typical gifted child has already mastered the subject matter more than 35 percent (of his age) beyond the norm for his age.* As we have seen, he is actually accelerated only 14 percent. The difference between 35 percent and 14 percent is 21 percent. Therefore, the typical gifted child is being held back more than a fifth of his age below the level to which he has already mastered his work as well as the average child is expected to do. This would seem to be a rather momentous finding.

The information test which was substituted for the corresponding part of the Stanford Achievement Test covered nature study and science, history, literature, and the arts. The test has 335 items, requires an hour in giving, and has a reliability coefficient above .90 with unselected age groups. The mean "information quotient," taking the test as a whole, is considerably higher than those found for the other subject quotients, *higher even than the mean intelligence quotient.* It is 155 for boys and 147 for girls. The gifted eight-year-old has as much general information as the normal twelve-year-old. Incidentally, it was found that this one-hour information test, which can be given and scored so easily, is one of the most reliable means at present available in identifying gifted children above the second school grade.

The extent to which unevenness of ability is found is set forth by De Voss in Part II of this chapter. Here it may be noted that the gifted child tends to run high in all the subjects. Only rarely does he drop near the average child in anything. At the same time, specialization of achievement is very marked in individual cases and is found in significant amounts slightly oftener among the gifted than among unselected children of corresponding mental age. It is possible that this may be due in part to a greater relative inequality in the amount of instruction in the various subjects, resulting from briefer school attendance; or it may be due to a greater tendency to 'ride a hobby.' Follow-up of these cases will show to what extent such unevenness of performance is prophetic of later accomplishment or of vocational aptitude.

School achievement as rated by teachers. Teachers rated both the gifted and control groups from one to seven on each subject studied. The mean ratings for the gifted are far higher in most of the subjects, especially debating, history, composition, literature, grammar, geography, reading, and arithmetic. For such subjects as music, physical training, drawing, manual training, penmanship, and shop work there is little difference between the two groups. Rank order correlations show that intelligence far outweighs the sex factor in determining the subjects in which a child will excel. Only from 1.7 percent to 5.6 percent of the gifted group are rated at various ages, as "rather uneven" or "very uneven" in their school subject abilities.

Subject interests. Each child of the gifted and control groups rated each subject from 1 to 5 according to his liking for it. Gifted children excel the control by more than 50 percent in the number of subjects which are liked. School subject preferences have considerable diagnostic value in differentiating gifted and control groups. Literature is much better liked by the gifted, as are also, though with less difference, reading, nature study, and United States history. Penmanship is least liked by the gifted. Correlational treatment of data shows that subject preference depends far more upon intelligence than upon sex. The correlation for "liked" and "easy" subjects ranges from .85 to .96.

Reading. Forty-five percent of our 643 subjects learned to read before starting to school, 20 percent before the age of 5, 5 percent before 4, and nine of them before 3. In the large majority of cases this was accomplished with little or no formal instruction. Both gifted and control groups kept a record of all books read during a period of two months. Each book read was rated by the child for its interest. The gifted read over a far wider range, especially more science, magazines, and informational books. The quality of their reading is measurably superior to that of the control children, and when they read the same books, they do so several years earlier. The gifted child is four times as likely to show marked interest in encyclopaedias, and twice as likely to be interested in dictionaries or atlases.

The mean number of books in the gifted child's home is 324. Only 7 of the gifted homes have no books, and 43 have 1000 or more.

Evidence of 'hot-house' methods. The gifted have had little formal instruction in the home and devote an average of less than two hours a week to home study of school lessons. More than 70 percent, according to the parents, have been allowed to "go their own pace" and 10 percent have been purposely "held back." The others have, as a rule, been mildly encouraged to forge ahead. It seems quite impossible to account for the intellectual progress these children have made on the theory of excessive stimulation. A few of our parents have attempted more or less forcing, but their efforts in this direction have not raised the I.Q.'s of their children above the general level of our group. In the main, our subjects have educated themselves. They have made rapid progress in learning because of their intellectual initiative and insatiable curiosity.

PART II. SPECIALIZATION OF ACHIEVEMENT

The problem. Accurate knowledge of the degree and direction of specialization of any child is valuable information. Reliable measurement of the special aptitudes and disabilities of gifted children is especially needed. On the one hand, these children have a splendid background in their high levels of general intelligence and of school achievement, and this equipment makes it imperative that any special abilities be discovered. It is in company with such general excellence that we expect the special aptitudes to reach their finest expression. On the other hand, there are fears expressed in some quarters that gifted children may be too one-sided in their development or that they with other children are made too much alike by modern educational methods with their over-emphasis on standardization and measurement. The data gathered by Professor Terman and his assistants are yielding definite and valuable facts concerning the degree to which the educational abilities of superior children are specialized.

We have approached this survey with two questions in mind. First: are the gifted children characteristically more, less or equally even in their abilities than are unselected children? Second: what is the nature of the unevenness of the abilities of individual gifted children? This question suggests the interesting hunt for children who have special aptitudes and disabilities.

In dealing with these questions it was necessary to accept some standard or ‘sea level’ from which to measure the amount or altitudes of the special abilities. Because of the highly selected group and the standards available for comparison, age norms were selected in preference to grade norms. The altitudes of these abilities above the age norms are measured in units which are the standard deviations of these age groups. These units are called ‘‘standard scores.’’[2] The advantage of the use of standard scores is that it allows us to compare directly any two scores, as, for example, 36 in language usage and 145 in spelling. In the form of 36 and 145 we are prone to judge them as very different, but expressed as standard scores, we find them each to be equal to 2 standard scores, as may be seen by reference to Fig. I.

Amount of specialization. Let us now turn to the first question stated above: How does the unevenness of our gifted children compare with that of unselected eighth-grade pupils? Kelley[3] found that "the indications are that eighth-grade children are in fact 'real persons' with specific and unique mental mechanisms." He studied a group of 96 eighth-grade children. Using the same method, we have treated the results for 100 gifted children of mental ages 14 to 15.4. The comparison of the results from the two groups shows a slightly greater unevenness of abilities in the gifted group. The difference may not be as significant as the resemblance, for, expressed in percentages, an average of 28.2 percent of the eighth-grade group showed measurable disparity between traits, while an average of 30.7 percent of the gifted children showed differences greater than can be accounted for by chance. In each group there is a sufficiently large percentage of cases showing measurable differences to encourage us to search farther for specialization in abilities.

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[2] A standard score is obtained by dividing the difference between a score and the mean of its distribution by the standard deviation. Thus: $z = \frac{X - M}{S.D.}$ when z is the standard score, X any obtained score, M the appropriate mean, and S.D. the standard deviation.

The amount of measurable differences is not the same for all the pairs of traits measured. If 31 percent of the gifted children show differences in their scores in computation and arithmetic reasoning which are great enough to be independent of such chance factors as the unreliability of the tests, and if 26 percent of the control group show a similar measurable disparity between scores in the same tests, we may say that the gifted children show a greater unevenness of ability in these two traits. Using this form of reasoning, we find that the gifted children show a greater percentage of cases of measurable disparity between the following pairs of traits, as measured by the Stanford Achievement Tests:

Arithmetic Computation and Arithmetic Reasoning
Arithmetic Computation and Word Meaning
Arithmetic Computation and Sentence Meaning
Arithmetic Computation and Paragraph Meaning
Arithmetic Computation and Spelling
Arithmetic Computation and Science Information
Arithmetic Reasoning and Word Meaning
Arithmetic Reasoning and Paragraph Meaning

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[3] Kelley, T. L. "A new method for determining the significance of differences in intelligence and achievement scores." *J. of Educ. Psych.* 14: Sept., 1923, 321-334.

Arithmetic Reasoning and Science Information
Word Meaning and Paragraph Meaning
Sentence Meaning and Paragraph Meaning
Sentence Meaning and Science Information
Paragraph Meaning and Language Usage
Paragraph Meaning and Science Information
Spelling and Science Information

The 96 eighth-grade children furnish a greater percentage of cases of measurable unevenness between the following pairs of traits:

Word Meaning and Sentence Meaning
Word Meaning and Language Usage
Word Meaning and Spelling
Sentence Meaning and Spelling
Language Usage and Spelling
Language Usage and Science Information

The gifted and the eighth-grade children have the same percentage of cases showing measurable disparity in the following pairs of traits:

Arithmetic Computation and Language Usage
Arithmetic Reasoning and Sentence Meaning
Arithmetic Reasoning and Language Usage
Arithmetic Reasoning and Spelling
Word Meaning and Science Information
Sentence Meaning and Language Usage
Paragraph Meaning and Spelling

The gifted children have not had as much school experience as the other children, and for this reason we would expect such traits as arithmetic computation, arithmetic reasoning, and spelling to show greater unevenness in the gifted group. On the other hand, the reading traits would not seem to be influenced so much by schooling.[4] From the comparisons just given we see that there is no evidence for spelling being responsible for more variability than the other achievement tests in either group. Computation and paragraph meaning each occur six times in the list of pairs in which the gifted children are more uneven. The most significant conclusion from this study is that the gifted children as well as the eighth-grade pupils have revealed measurable differences running up to 45 percent for certain pairs—a fact which makes it quite certain that a study of individuals will bring out many interesting cases of unevenness.

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[4] It is probable that the slightly greater unevenness of the gifted is partly accounted for by the fact that they ride their hobbies harder.—L. M. T.

Profiles. This promise of interesting cases of unevenness has been abundantly fulfilled. Questions concerning the unevenness of individual children have partial answers in the hundreds of profiles drawn on the plan of the figures shown here. These profiles supply graphic case studies. A brief explanation of one of them will furnish the method for interpreting the others shown.

Figure I is the profile for A. K., one of the gifted children found in the California survey. The heavy line at O in the first column has the average scores for ten-year-old children written just above it. Thus the mean score[5] for ten-year-old children on the Stanford-Binet is 10-6, the mean for Language Usage is 13, etc. The lines running parallel to the line of the mean scores mark off standard scores above and below the means. Thus, a score of 24 in Language Usage is 1 standard score, or 1 standard deviation above the mean; 36 is 2 standard scores above the mean, etc. The scores for Reading Total, Arithmetic Total and Information Total are separated by a space to indicate that they are in a different category from the other scores. The solid line which crosses the page in a very irregular course connects the points which represent A. K.'s scores on the tests indicated. This line is A. K.'s profile of abilities in so far as we have measured them. It starts at the left from a point on the perpendicular which represents a Stanford-Binet M. A. of 14-10, which is the equivalent of a standard score of 3.8. This line finds its lowest point at Computation, where the standard score is .4, which means that A. K. scores only .4 of a standard deviation above the mean for ten-year-olds in Computation. On the

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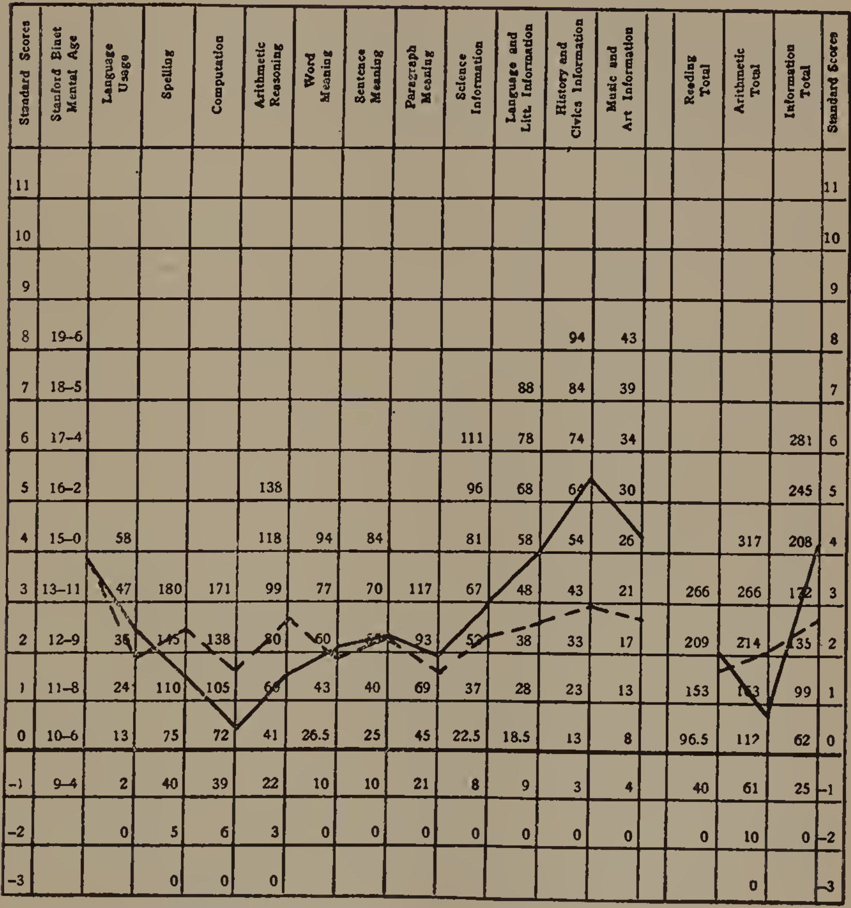
[5] The means and standard deviations are those which were found in the distributions of scores on which the tests were standardized. As the distributions were all made up of California children, they furnish a good basis for comparison with the gifted children of California.

INDIVIDUAL PROFILE, USING STANDARD SCORES FROM TWELVE TESTS.

TEN YEAR GROUP

Name A— K—
No. 50 Sex Boy
School Grade 4 H. 2
Chronological Age 10-3
Mental Age 14-10
I. Q. 144

(Means and standard deviations taken from age group 10:00 to 10:11:30. Tests: Stanford Binet, Stanford Achievement and General Information.)



Standard Scores	Stanford Binet Mental Age	Language Usage	Spelling	Computation	Arithmetic Reasoning	Word Meaning	Sentence Meaning	Paragraph Meaning	Science Information	Language and Litt. Information	History and Civics Information	Music and Art Information		Reading Total	Arithmetic Total	Information Total	Standard Scores
11																	11
10																	10
9																	9
8	19-6										94	43					8
7	18-5									88	84	39					7
6	17-4								111	78	74	34				281	6
5	16-2				138				96	68	64	30				245	5
4	15-0	58			118	94	84		81	58	54	26			317	208	4
3	13-11	47	180	171	99	77	70	117	67	48	43	21		266	266	172	3
2	12-9	35	145	138	80	60	55	93	52	38	33	17		209	214	135	2
1	11-8	24	110	105	60	43	40	69	37	28	23	13		153	163	99	1
0	10-6	13	75	72	41	26.5	25	45	22.5	18.5	13	8		96.5	112	62	0
-1	9-4	2	40	39	22	10	10	21	8	9	3	4		40	61	25	-1
-2		0	5	6	3	0	0	0	0	0	0	0		0	10	0	-2
-3			0	0	0										0		-3

Means for ten year old children

LEGEND: Solid line ——— indicates obtained standard scores.
Broken line ···· age equivalent for M. A. of subject.

FIG. I

other hand, his score in History and Civics Information is more than 5 standard deviations above the mean. All of his scores in the Information tests are well above their means. Thus, the distances on the perpendicular lines between the line of the means and the profile line are the measures of comparisons between A. K.'s accomplishment and the average accomplishment of ten-year-old children.

Some might wish to compare a pupil's accomplishment with the average accomplishment of children of the same intelligence level. This comparison has been attempted by means of the accomplishment quotient. On this profile such a comparison is made. The dotted line on A. K.'s profile crosses points which are the age equivalents in scores on the several tests corresponding to M. A. 14-10. That is, these age equivalents are estimated to be the average scores of children 14 years, 10 months old. It must be remembered, however, that the units of comparison along the perpendicular lines are not the standard deviations for the distributions of scores made by fourteen-year-old children, but are still the standard deviations for ten-year-old children. We know that it is the tendency for standard deviations of the older age groups to grow greater, hence A. K.'s profile plotted on a form prepared from data secured from fourteen-year-old pupils would doubtless show the profile line to be nearer the line of the means than it is to the broken line in Fig. I.

If this profile of A. K.'s scores is a reliable picture of his abilities, it would seem that his conspicuous unevenness would reveal itself in other ways. In this case, at least, the assumption is warranted, for a review of the information furnished by A. K.'s report of his interests, his mother's ratings and report, and his teacher's testimony exposes nothing which contradicts the profile but gives much interesting evidence in its support. Both his interests and his reported readings would presage high scores in history and civics and language and literature information. He rather dislikes arithmetic. Not all of our profiles are so well supported by the supplementary information. In the main, however, the profiles showing a high degree of specialization are supported by other evidence from the Interest Blanks and the Home and School Information Blanks.

Figure II is another profile drawn on the form for the ten-year-old group. Figure III is a sample from the eleven-year-group. The

INDIVIDUAL PROFILE, USING STANDARD SCORES FROM TWELVE TESTS.

TEN YEAR GROUP

Name L——, M——

No. 382 Sex Girl

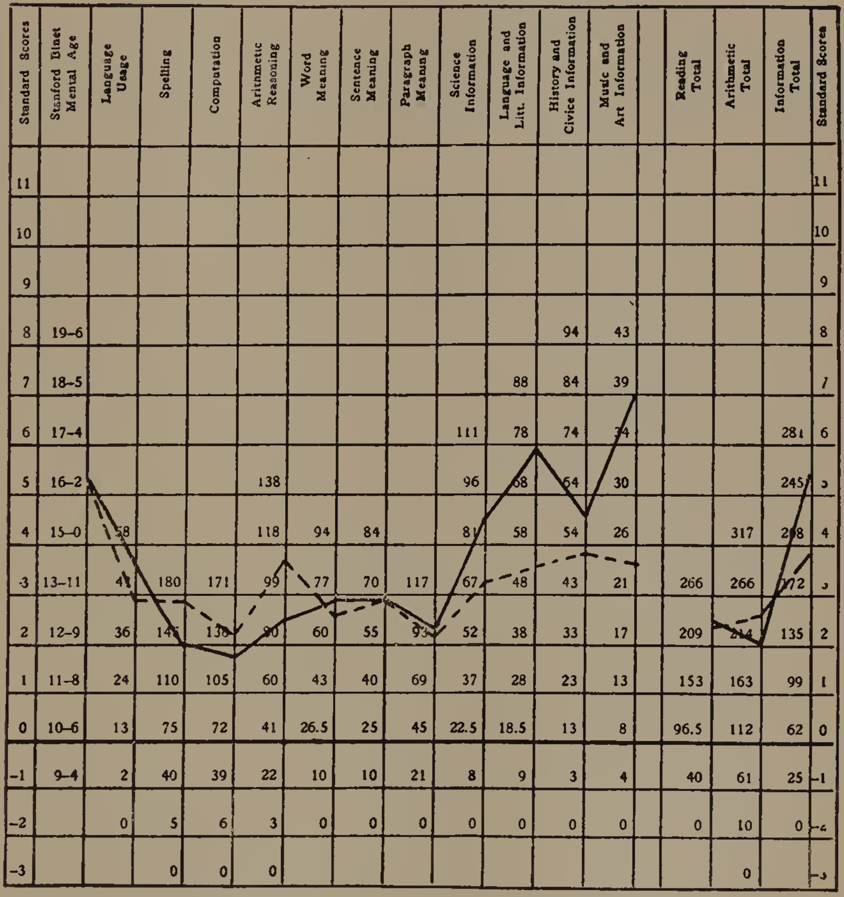
School Grade 5 H. ✓

Chronological Age 10-7

Mental Age 16-6

I. Q. 155

(Means and standard deviations taken from age group 10:00 to 10:11:30. Tests: Stanford Binet, Stanford Achievement and General Information.)



Standard Scores	Stanford Binet Mental Age	Language Usage	Spelling	Computation	Arithmetic Reasoning	Word Meaning	Sentence Meaning	Paragraph Meaning	Science Information	Language and Litt. Information	History and Civice Information	Music and Art Information		Reading Total	Arithmetic Total	Information Total	Standard Scores
11																	11
10																	10
9																	9
8	19-6										94	43					8
7	18-5									88	84	39					7
6	17-4								111	78	74	34				281	6
5	16-2				138				96	68	64	30				245	5
4	15-0	58			118	94	84		81	58	54	26			317	208	4
3	13-11	47	180	171	99	77	70	117	67	48	43	21		266	266	172	3
2	12-9	36	145	138	80	60	55	93	52	38	33	17		209	214	135	2
1	11-8	24	110	105	60	43	40	69	37	28	23	13		153	163	99	1
0	10-6	13	75	72	41	26.5	25	45	22.5	18.5	13	8		96.5	112	62	0
-1	9-4	2	40	39	22	10	10	21	8	9	3	4		40	61	25	-1
-2		0	5	6	3	0	0	0	0	0	0	0		0	10	0	-2
-3			0	0	0										0		-3

Means for ten year old children

LEGEND: Solid line ——— indicates obtained standard scores.
Broken line - - - - age equivalent for M. A. of subject.

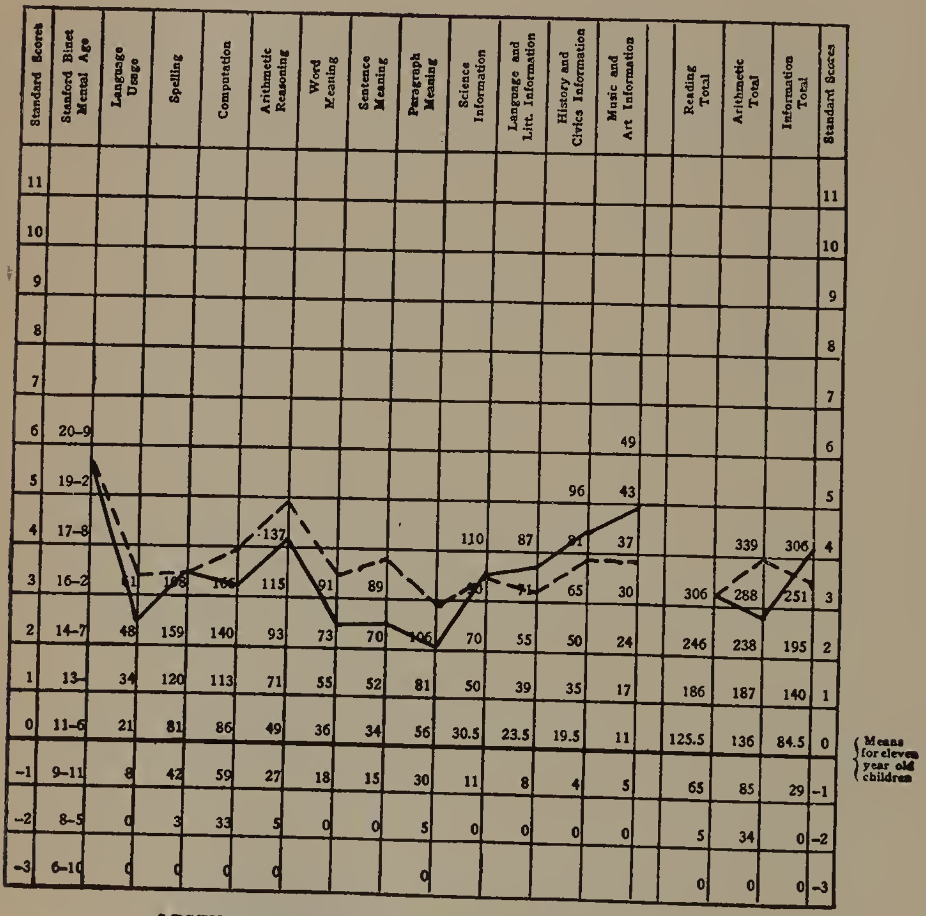
FIG. II

INDIVIDUAL PROFILE, USING STANDARD SCORES FROM TWELVE TESTS.

ELEVEN YEAR GROUP

Name A—, A—.
No. 110 Sex Boy
School Grade 9 H. L.
Chronological Age 11-11
Mental Age 20-4
I. Q. 171

(Means and standard deviations taken from age group 11:00 to 11:31:30. Tests: Stanford Binet, Stanford Achievement and General Information.)



Standard Scores	Stanford Binet Mental Age	Language Usage	Spelling	Computation	Arithmetic Reasoning	Word Meaning	Sentence Meaning	Paragraph Meaning	Science Information	Language and Litt. Information	History and Civics Information	Music and Art Information		Reading Total	Arithmetic Total	Information Total	Standard Scores
11																	11
10																	10
9																	9
8																	8
7																	7
6	20-9											49					6
5	19-2										96	43					5
4	17-8				137				110	87	81	37			339	306	4
3	16-2	61	198	166	115	91	89		90	71	65	30		306	288	251	3
2	14-7	48	159	140	93	73	70	106	70	55	50	24		246	238	195	2
1	13-	34	120	113	71	55	52	81	50	39	35	17		186	187	140	1
0	11-6	21	81	86	49	36	34	56	30.5	23.5	19.5	11		125.5	136	84.5	0
-1	9-11	8	42	59	27	18	15	30	11	8	4	5		65	85	29	-1
-2	8-5	0	3	33	5	0	0	5	0	0	0	0		5	34	0	-2
-3	6-10	0	0	0	0			0						0	0	0	-3

LEGEND: Solid line ——— indicates obtained standard scores.
Broken line - - - - age equivalent for M. A. of subject.

FIG. III

subject of the former is a case of highly specialized ability in music which is reflected in the score in music and art information; the subject of the latter has a very high I.Q. and an achievement of high level in all the tests, but not without interesting unevenness.

The advantages gained by using the standard scores in the profiles are numerous. From tables of the probability integrals we may find the probability of a standard score of 2.0 falling as low as its mean to be 23 in 1000. The probability of a standard score of 3.00 being as low as the mean is 1 in 1000, etc. An even more important advantage appears when we study the differences between standard scores. The method which we shall use here might be applied to any of the differences between the several standard scores on a profile.

We shall apply it only to the differences between the standard scores of the paragraph meaning and the standard scores of the other tests. For this study we must have the standard error of the differences between the standard scores. The formula[6] for this standard error is $\sigma_{d.\infty\omega} = \sqrt{2-r_{1I}-r_{2II}}$ in which $\sigma_{d.\infty\omega}$ indicates that it is the standard error of the difference between true standard scores, r_{1I} is the reliability coefficient for the first test, say the Paragraph Meaning, and r_{2II} is the reliability coefficient for the second test, say Computation. In Table I we have the needed reliability coefficients and in Table II are the standard errors.

TABLE I.—RELIABILITY COEFFICIENTS FOR ELEVEN ACHIEVEMENT TESTS AND THE STANFORD-BINET FOR UNSELECTED TEN- AND TWELVE-YEAR-OLD CHILDREN

Tests	Ten-Year-Old	Twelve-Year-Old
Stanford-Binet	.93	.94
Language Usage	.75	.80
Spelling	.95	.95
Computation	.92	.85
Arithmetic Reasoning	.88	.90
Word Meaning	.96	.94
Sentence Meaning	.87	.88
Paragraph Meaning	.94	.90
Science Information	.87	.90
Language and Literature Information	.78	.91
Music and Art Information	.65	.75

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[6] Kelley, T. L. *Op. cit.*

TABLE II.—STANDARD DEVIATIONS OF THE DIFFERENCES BETWEEN THE STANDARD SCORES FOR TEN-YEAR-OLD CHILDREN

									Information		
	Binet M. A.	Lang. Usage	Spelling	Computation	Arith. Reas.	Word Mean.	Sent. Mean.	Par. Mean.	Science	Lang. & Lit.	Hist. & Civ.
Language Usage	.56										
Spelling	.35	.55									
Computation	.39	.57	.36								
Arithmetic Reasoning	.44	.61	.41	.45							
Word Meaning	.33	.54	.30	.35	.40						
Sentence Meaning	.45	.62	.42	.46	.50	.41					
Paragraph Meaning	.36	.56	.33	.37	.42	.32	.44				
Science Information	.45	.62	.42	.46	.50	.41	.51	.44			
Lang. and Lit. Information	.54	.69	.52	.55	.58	.51	.59	.53	.59		
Hist. and Civics Information	.58	.72	.57	.59	.62	.56	.63	.57	.63	.70	
Music and Art Information	.66	.78	.64	.66	.69	.63	.70	.65	.70	.76	.79

Making use of these data, let us re-examine the differences found in Fig. I. Here we find the standard scores for the Paragraph Meaning and Computation to be 1.94 and .38, respectively. The difference between them is 1.56. Referring to Table II, we find the standard error to be .37. Then this difference between the Paragraph Meaning score and the Computation score is $\frac{1.56}{.37}$, or 4.22, standard errors. Hence the probability is that A. K.'s ability in Computation is not as great as his ability as expressed by his score in Paragraph Meaning. Using similar calculations we have for A. K. the following data.

TABLE III.—STANDARD SCORES AND DIFFERENCES BETWEEN STANDARD SCORES ON PARAGRAPH MEANING AND OTHER TESTS AND STANDARD ERROR OF DIFFERENCES FROM FIG. I

	Standard Scores	Differences	Stand. Error of Diff.
Paragraph Meaning	1.94	..	..
Language Usage	2.46	.52	.93
Spelling	1.44	– .50	–1.52
Computation	.38	–1.56	–4.22
Arithmetic Reasoning	1.57	– .37	– .88
Word Meaning	2.11	.17	.53
Sentence Meaning	2.23	.29	.66
Science Information	3.09	1.15	2.61
Language and Lit. Information	3.90	1.96	3.70
History and Civics Information	5.43	3.49	6.12
Music and Art Information	4.32	2.38	3.66

The data of Table III tell us that the probability of there being a real difference between A. K.'s scores of Paragraph Meaning and his scores in Language Usage, Arithmetic Reasoning, Word Meaning, and Sentence Meaning are in each case slight, as compared with the probability of real differences existing between his scores in Paragraph Meaning and the other tests. Compared with his ability in Paragraph Meaning, his ability in History and Civics Information shows the greatest divergence. There can be no doubt that the differences indicated in the Profile of Fig. I are many of them very real differences. The range from 6.32 standard errors above the standard score in Paragraph Meaning in the case of History and Civics Information to 4.22 standard errors below in the case of Computation is conclusive evidence that these abilities or combinations of abilities exist in different amounts in A. K.'s equipment.

The application of this method to the differences between the Stanford-Binet scores and the scores of the Achievement Tests is an inviting field. This study is now in progress.

CONCLUSIONS JUSTIFIED BY THE STANFORD DATA

1. The data show that the physical and mental traits which characterize typical gifted children appear to warrant the belief that more intense educational effort in their behalf on the part of the school would not involve the risks which various writers have feared. The "eccentricity of genius" is largely a myth.

2. That the typical gifted child has already mastered the school work to a point more than a fifth of his age beyond the grade in which he is located shows the difficulty, if not the impossibility, of keeping such children profitably occupied without allowing them to become considerably accelerated. Enrichment of the curriculum is very important, but it is inadequate to meet the situation without acceleration. Especially serious is the danger that the so-called 'enrichment' will consist chiefly in the multiplication and extension of activities on a level too low to make any serious demands on the child's abilities. The solution would seem to lie in *enrichment of the right kind, plus acceleration.* Surely there is no good reason why most children of 140 I.Q. or higher should not enter the high school at 12 years and the university at 16. This would allow for an acceleration of approximately three years, for the average age of high-school and university entrance is about 15 and 19 years, respectively.

3. Significant specialization of achievement is far from rare, is probably indicative of specialization of ability, and may be of considerable value in educational and vocational guidance.

CHAPTER XI

CASE HISTORIES OF GIFTED CHILDREN

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INTRODUCTORY

The method of the case history has long been successfully and beneficially employed in the literature of medicine, psychiatry, and criminology. Healy's work on delinquent children has, through its case histories especially, done a great service in bringing fuller realization of the necessity of detailed study of every delinquent if we would handle his case humanely, intelligently, and effectively. The establishment of the *Psychological Clinic,* by Witmer, and of *The Training School,* at Vineland, with their illuminating case descriptions, has had a marked influence in stimulating this sort of study. The pedagogical significance of such careful diagnoses and prognostications as one finds in these sources can hardly be overestimated. They have done an unmeasured amount of good in the improvement of the instruction of those teachers who have studied them and who have tried to follow the suggestions they give.

Within the past ten years a very creditable beginning has been made in the creation of a literature on gifted children. In the bibliography which accompanies this volume there appears to be a prominent place for carefully prepared case histories of individual children who have shown exceptional talent or capacities. The largest group of such descriptions at the present writing is the forty-one cases brought together by Terman in his *Intelligence of School Children.* The extensive search that Terman and his co-workers are now carrying on for children of this type will add, in time, hundreds of other histories. One of the most valuable contributions such work promises is the illumination that such detailed accounts, with new chapters written every few years, will throw upon the nature and the course of development of talent in children who early show exceptional general intelligence.

One need not commit oneself to any preconceived theory of the nature of general intelligence; one need not hold any over-sanguine hopes as to the possibility of predicting genius, in order to see that the gathering of scientific data on a very large number of individuals is an indispensable step in the direction of a real understanding of the problems involved in the education of gifted children.

We need far more light than we have on the effect of specific types of school and home training upon gifted children. We can get this only by successive accounts of the progress and development of individual children whose training and development are carefully watched and tested. It is to be hoped that in various parts of our country others will carry on the same type of follow-up work that Terman and his co-workers have begun.

The compiler of the accompanying case histories presents them merely as suggestive and illustrative material. It may be questioned whether we have yet learned how best to collect and report data on such children as these. At present, it seems clear that the larger the number of persons collecting and reporting and the greater the variety of form of report, the better, so that we may learn the values of each type of data.

It is difficult to make trustworthy interpretation of the data concerning an individual case. We know all too little to prophesy the outcome in any case. The great need at present is follow-up work over a period of years of a large number of cases in order that we may learn *what actually does happen*. When this has been done, we may then analyze with more intelligence and determine with more certainty, the factors which have contributed to the outcome.

Concrete illustrations of the follow-up work of which I am speaking may be seen in the several reports on Edward Roche Hardy by Harrison, Burke, and Hollingsworth, in Vols. I and V of the *Journal of Applied Psychology*, and in our own Case R. W. The latter was first reported by Root in *Psychological Monograph*, Vol. 29, in 1921, as his Case D 7, when the child was 7 years of age. A second report appears in Lulu M. Stedman's *The Education of Gifted Children,* 1923 (now in press), when the child was 12 years 7 months of age. Our own account records some interesting developments in the child's musical career up to the age of about 13 years and 6 months. The further reports of these and similar cases five and ten years hence will be of still greater value and interest.

The histories here given are not intended to be models. It is hoped that they will give the reader some concrete idea of the type of child who, throughout this book, is spoken of as the "gifted" child. It is hoped that many readers will be stimulated to undertake the task of gathering similar data. Most of the children whose cases are here reported have been under careful observation and special training for several years past. Their development will be followed for years to come. The findings should be enlightening. The cases have been chosen so as to present rather diverse types. Some show well-rounded general ability. Some have highly specialized talents combined with good general ability. Some come from highly cultured families where they have had every advantage that a cultured environment can contribute; others come from homes of only average culture or less. It is the diversity of the conditions out of which talent springs that urges upon us the necessity of the most patient and painstaking research into large numbers of cases of all sorts. But let our cases speak for themselves.

THE HISTORIES

I. Boy, E. B.

E. B., who will be 10 years of age in April 1924, is at the present writing a pupil in a room for gifted children. He may well be taken as a type of child with rather well balanced, all-round superiority of a very marked degree. There are hereditary factors in his case that are also of much interest. He is, with one exception, the most markedly gifted child the writer has known.

Physical data: E. B. learned to walk alone at 16 months. Talked in short sentences at 18 months. Of children's diseases has had only whooping cough and measles; no lasting after effects. His health is fairly good. Amount of physical energy average for his age.

Early educational training: Parents answered all questions as fully as possible while the interest was 'white-hot.' Began reading and telling stories to the child at two years of age. Between the ages of two and three, read to him about ten hours weekly. After four, read to child about fifteen hours weekly. This was continued until after child was seven years of age. Child learned to read about a month before his fifth birthday. Had very little and very casual help. In six months he could read the daily newspaper and apparently anything else not technical. Before five years of age he read about five hours per week. Between seven and eight, about ten hours. At nine years of age, he reads 14 hours weekly. At five he read: *Little Folks Junior Classics, National Geographic Magazine.* At six, *The Mentor* and Breasted's *Ancient History.* History is his hobby. At nine, he speaks of Breasted's *History* as his favorite book and reads it during much of his leisure time, reading in various places according to his fancy rather than continuously. He knows from his casual, undirected reading the battle formation and outlines of action of most of the decisive battles of the ancient world.

School training and school records: In 1919 (September) and 1920 he went to school intermittently (because the school was quarantined repeatedly that year); all told, he probably had less than two months' work. He gained all his fluency in reading during that time. Entered school regularly at the age of six years ten months, going immediately into the second grade. In one year from that time he had finished the B-fifth grade, although it was his mother's policy to hold him back "to avoid sacrificing the body to the mind." No home study was done during that time. At nine years of age he is doing with ease work which is usually done in the B-seventh grade, greatly enriched, and could do more difficult work if permitted to take it. The others in the group (also superior) are two or three years his senior, yet he leads the class in the quality of work. He concentrates more intensely than the other members of the class, seldom wastes time, and is always able to organize his study hour without assistance from his teachers. His mental ability seems to be fairly even. He is perhaps a little more interested in history than in other school subjects.

Indications of superior intelligence: E. B. gave indications of superior intelligence as early as two years of age. In fact, he could put together a dissected map of the United States before he was two. He knew the states by name before he could pronounce all of them. His mother states that he has been an inveterate drawer since the age of three, but says that she did not notice any special cleverness except in rapidity of execution and fidelity of action. The subjects of his drawing have always been contests—either games or action. As early as five years he noticed and commented on the difference in faces.

On his own initiative and with no one's knowledge, at five years and nine months of age he learned *Barbara Frietchie.* The poem had been read to him by his aunt. At the same age he was interested in, and knew all about, the causes of the World War and its events. He has always taken a profound interest in anything which tends to explain life and the universe. At six and one-half, upon being told of the analogy between the immortality of the soul and the escape of the butterfly from the chrysalis he said: ''But, you see, the butterfly dies,'' thus registering his protest against the bad logic of the analogy.

At seven, he exclaimed with great irritation: ''But mother, you *have* to believe in luck or religion, one or the other.'' He is interested in theosophy and seemingly fascinated with the belief of the soul returning again and again. He often expresses his impatience with Christian Science or any kind of healing by suggestion. This attitude is in spite of the fact that his mother has often shown a sympathetic attitude toward all forms of mental healing. E. B. has always thought seriously.

At six, he learned to play chess. His mother discouraged this, because she thought it too taxing, and because he felt his defeats too keenly.

A large part of his leisure time is spent in reading. Among books and poems read at, or before, six years are *Robin Hood, Alice in Wonderland, Tanglewood Tales* and *Just So Stories,* Breasted's *Ancient History, Paul Revere's Ride* and *Barbara Frietchie;* at seven, *River's End, Lays of Ancient Rome, History of Scotland, Book of Roland, Jungle Books, Wild Animals I Have Known;* at eight, *The Three Musketeers, Twenty Thousand Leagues Under the Sea, Dr. Doolittle, Ivanhoe, The Story of Reingold.* Among the books read since nine are: *Twenty Years After,* by Dumas; *Bar 20 Days,* by Mulford; and *Tom Sawyer,* by Mark Twain.

Test records: E. B.'s record in the Stanford-Binet tests was as follows:

			Examiner
C.A. 7-10	M.A. 13-4	I.Q. 170	Miss Fuller
C.A. 9-6	M.A. 17-1	I.Q. 179	Miss Stedman

In the Army Alpha test (examiner Waddle), given at the age of 9, his score was 105, indicating a mental age of 16 (Kohs-Proctor) or 16-9 (Army Psychology norms).

His score in the Stanford Achievement Test, given at the age of 9-6, shows his subject ages to be as follows:

Reading	15-9	History and Literature	14-1
Arithmetic	16-2	Language Usage	17-11
Nature and Science	12-5	Spelling	18-6

Family history: E. B. is of English, Scotch, Dutch, and Welsh descent. Father, who is deceased, finished second year of college. At various times he was an editor, army officer, and civil service clerk. His special hobbies were literature, music, writing, reform movements, and civic welfare work. He taught soldiers for one year with no remuneration and for one year with a small salary. He was also a delegate from the state to the League for Permanent Peace Conference. Notable ancestors on the father's side are: William Bradford, Governor of Plymouth Colony; William Bransford Shubrick, in charge of the Pacific squadron in the Mexican War, and James Hayward, signer of the Declaration of Independence. The grandparents for several generations were federal judges of Delaware. In general, the father's ancestors were leaders, in the public eye, and historically prominent. Other distinguished relatives on the father's side are the Duponts of Delaware and the Bayards of the same state.

The mother is a high-school graduate and had also the advantage of one year in a seminary. She has taught, done bookkeeping, office and clerical work at various times. She has always been interested in club work and civic affairs and was state representative for "Women in Industry" in the Council for Defense during the World War. Her father was a farmer. He must have been innately superior, for with little schooling he read and studied all his life. He had an unusual memory, was very thoughtful and greatly interested in religion. Although not a college graduate, the mother has always read and studied and is decidedly superior to the average college graduate.

Plays, interests and social tendencies: Prefers playmates either older or much younger of the same sex. His superior ability has not resulted in his being dubbed "queer" or "different." His mother states that he was much beloved in the first school attended and treated as someone a bit finer than the others. This was spontaneous on the part of the children and brought out fine traits of protectiveness in the older children. He is perfectly competent to amuse himself when no playmates are present and plays imaginary games with imaginary opponents, taking imaginary trips, especially automobile trips. He plays with maps and is more interested in mental than physical games.

Characteristics: E. B. is rather more prudent and exhibits more common sense than the average child. He has extraordinary will power and is decidedly persistent in overcoming difficulties; can concentrate for long periods on abstract problems, but he is not egotistical or conceited, although desirous of excelling. He is quiet, rather retiring, and somewhat backward about meeting people.

In general intelligence he is far above the average. This statement is borne out by records of mental tests. He is an original thinker, has keen desire to know the truth, and a keen sense of humor. On the other hand, he is sympathetic, rather more sensitive to approval or disapproval than the average child; is cheerful and unselfish.

Additional notes on E. B.: In checking the vocabulary test he has never attempted to define a word that he did not know. He said: "I have seen that word in books, but I don't know its meaning.'' Often he would define a word and then he would say ''Another usage is ....'' and then he would illustrate. In explaining the fables in the Binet test he said of the Fable of the Milkmaid and her plans: ''It teaches us this lesson: Do not visualize things before they happen. But that is not always true. Sometimes it is good to visualize things before they happen.'' He reproduced the thought of the second passage in the 18th-year book test. 'His attention was called to the fact that he did not say that sometimes one's happiness is not as great as we should like it and he said: ''I told you that in another way. I said that sometimes we think that life was unjust to us.''

II. Boy, M. D.

This is a case in which inheritance and social environment have combined to give a remarkably superior mind, interested in abstract and philosophical problems and remarkably clear and exact in thinking them out. He also shows exceptionally keen appreciation of beauty in nature.

Physical data: Learned to walk alone at sixteen months. Talked in short sentences at 15 to 16 months. Has had adenoids and tonsils removed. Has had whooping cough and chicken pox with no lasting after effects. Is remarkably underweight. Nutrition poor in spite of careful attention to diet and exercise. Yet in spite of an appearance of physical weakness, he has a greater degree of strength than one would expect. His general vitality and resistance to fatigue are good.

Early educational training: Parents have always answered his questions seriously to the best of their ability. He has been allowed to go at his own pace in activities. His parents told him stories and read to him five to six hours weekly at the age of two to five and three to four hours weekly at the age of six to seven. He learned to read when he started to school at 6½ years. He has been surrounded with tools, blocks, and crayons from infancy. A wealth of educational opportunity has surrounded him constantly and his environment has stimulated thoughtfulness.

He has been in school since 1918, with the exception of one half year when he was out of school on account of ill health. He is now doing good work in nearly all subjects. He writes unusually good poetry and excellent prose.[1] He is especially good in social science work, but has been a very poor speller, owing to dislike for the subject and to lack of interest and concentration on it. Recently, there has been a marked change in this with very good results. He has learned how to learn to spell. He read *Treasure Island* and *Tom Sawyer* at the ages of 9 to 10; *Ivanhoe, Robin Hood,* and the *Youth's Companion* at the ages of 11 to 12.

Indications of superior intelligence: M. D. had a remarkable early vocabulary. Is extremely logical in his reasoning. Has excellent perception of causal relationships. Showed dexterity of hand at the ages of 3 to 4 years. Making stage settings has always been a fascinating hobby since the age of 4. He has extraordinary appreciation of beauty in art and nature. This is shown in some of his poetry. Is anxious to excel. Decidedly above the average in general intelligence.

Stanford-Binet records:

C.A. 5-6	M.A. 8-6	I.Q. 154	(Root)
C.A. 9-10	M.A. 13-6	I.Q. 138	(Fenton)
C.A. 11-10	M.A. 16-8	I.Q. 141	(Stedman)

Stanford Achievement test: His scores in this test, given at the age of 11-8, show subject-ages as follows:

Reading	15-0	History and Literature	16-0
Arithmetic	15-4	Language usage	15-9
Nature and Science	15-3	Spelling	12-3

Composite Educational Age 14-7

Family history: Of English, Scotch, and Welsh descent. His father holds B.S., M.A., and Ph.D. degrees. Has published several researches. Science, philosophy, and education are his greatest interests. His hobby is athletics, in which he has always had interest and ability. He has taught for 15 years in high school, normal school, and university and is now dean of a teachers' college. He began teaching at 21.

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[1] See Stedman, Lulu M. *The Education of Gifted Children.* Chap. 13, Case M. D.

The father's father is a clergyman, a college graduate, an extremely dynamic character. Engaged in "Y" work during the war. His hobby is golf in which he has won a good many trophies.

The father's mother completed one year of college. Left to marry. Has held important executive positions in various church societies, including one state presidency.

The mother's father was also a clergyman and a missionary to India. Her grandfather was a clergyman and an author of marked ability.

The mother's mother was a college graduate. She wrote a biography of her husband which is of marked literary excellence.

Characteristics: M. D. is of the "high strung" type, and rather strongly emotional. He is tall, slender, frail looking. He displays a logical, philosophical attitude toward life that would do credit to an adult. He has a marked sensitiveness to natural beauty. He takes delight in conversation and is good at it. He has a keen moral sense and decided conceptions of right and wrong. Is very sincere and has a good disposition. Takes teasing in the right spirit. Is inclined to be mischievous. Works best when there is no one about with whom he may converse.

III. Boy, E. G.

This case is illustrative of the appearance of superior abilities in families in which school advantages have been very much restricted for several generations. Such cases, not at all infrequent, indicate the importance of careful surveys of intelligence among all classes of children. Talent is likely to be discovered in most unexpected places. Such talent should be conserved and developed wherever it is found.

Physical data: E. G. has had extremely good health since birth. Had measles at age of four (very light).

Educational: Has made collections of books. Likes school. Nursery rhymes and Bed-time Stories read to child six hours weekly up to age of eight years. Learned to read before starting to school. Helped by mother. Started to school at age of six years. Went to kindergarten one month, then entered the first grade. He skipped the first half of the first grade. Has had violin and dancing lessons outside of school. Shows fair ability in music and very superior ability in dancing.

School training and school records: Has attended University Training School, University of California, Southern Branch, six years. Is now doing seventh-grade work in all subjects. Has been enrolled in the Opportunity Room for gifted children since September, 1922.

Indications of superior intelligence: E. G. is very observing, has a keen sense of reasoning, is particularly brilliant in arithmetic, has fair mechanical ingenuity, and has displayed marked ability on the professional stage.

Test records: His record in the Stanford-Binet tests was, C.A. 10; M.A. 14-1; I.Q. 143. In the Army Alpha test, given at the age of 10-10, his score was 68, indicating a mental age of 13-6 (Kohs-Proctor) or 14-4 (Army Psychology Norms).

His score in the Stanford Achievement test, given at the age of 11-3, shows his subject-ages to be as follows:

Reading	14-2	History and Literature	12-10
Arithmetic	15-2	Language Usage	15-6
Nature and Science	11-5	Spelling	14-1

Composite Educational Age 14-1

Family history: Jewish descent. Father completed two years of high school. Is now a jeweler. Interested in dramatics.

Mother completed one year of high school and attended night school. Held positions of bank teller and cashier. Thorough in all undertakings.

Father's father born in Poland. Main occupation, jeweler. Never attended school. A very capable, successful business man.

Father's mother born in Germany and of German descent. Completed grammar school. Main occupation, housewife.

Mother's father born in Poland. Never attended school. Is a merchant. Mother's mother born in Poland. Never attended school. Main occupation, housewife. Has an aunt, Nora Bayes, who is a successful comedienne on the professional stage. Average intelligence shown in both mother's and father's families.

Characteristics: Decidedly more than average physical energy. More prudent than average child, but very self-confident, strong-willed, and persevering. Strong appreciation of music. Decidedly keen humor. Very optimistic. Decidedly social. Decidedly a leader. More popular than the average child. Has a sensitive disposition. Anxious to excel. Decidedly more than average sympathy. Very generous, conscientious, truthful. Has great curiosity. Above average common sense.

Large part of leisure time in last two years has been spent in games, playing alone, working with machinery and tools.

IV. Boy, J. R. J.

The case of J. R. J. seems to be one of well-balanced general superiority. It is illustrative of a type of intense application, persistence, and effort in learning that is often, but by no means always, found in such cases.

Physical: Learned to walk alone at 14 months. Talked in short sentences at 18 months. Has had the usual children's diseases. Recovery was rapid in all cases. No lasting after effects. The report of a recent physical examination, given by a competent physician, shows that J. R. J. is a perfectly normal child in every way—unusually well and strong. The mother has always been careful to give him well-balanced meals, has required him to go to bed early, in addition to lying down in a darkened room for a half hour daily just before eating his evening meal. This she felt was necessary because of the intensity with which the child goes into everything he undertakes to accomplish, using all of his energy and keeping at the problem until it is solved.

Early educational and social training: The mother has no theories of child training other than leaving the child free to develop along the lines of his particular interests, answering his questions truthfully, and talking to him as she would to another adult. She reports that it has seldom been necessary to punish him, as he responds readily to reason. It was never necessary to stimulate a desire to learn. He was always wide-awake and alert.

The parents began telling stories or reading to him when he was about two years of age and continued this until he was about six and one-half, when he began reading by himself. At eight, he went to the near-by library and chose his own books without aid from the librarian. He reads by spells, reading intensely for a long time, then laying books aside for other interests. He did not learn to read before entering school because he was so absorbed in other occupations in which he was especially interested, but he did learn to read independently in a very short time after school entrance.

J. R. J. entered the kindergarten at age of 5 years 10 months and attended four months. In 1921, at age of 6-4, he entered the B-first grade. In two years he completed the work of three grades and at the age of 8-4 is now doing the work of the fourth grade successfully. He has done no home study on school problems and has not been encouraged to forge ahead, but rather has been held back because his mother felt that he did not need pushing.

Stanford-Binet records:

C.A. 6-4	M.A. 9-2[2]	I.Q. 144
C.A. 8-6	M.A. 12-10	I.Q. 150

Stanford Achievement records: J. R. J.'s record on the Stanford Achievement test, given at the age of 8-6, indicated the following subject-ages:

Reading	12-4	History and Literature	11-11
Arithmetic	9-11	Language usage	14-4
Nature and Science	11-1	Spelling	9-8

Composite Educational Age 10-9

Indications of superior intelligence: The mother says that J. R. J. manifested superior intelligence as early as 18 months of age and seemed to develop an understanding of things in his environment very rapidly. He demonstrated unusual musical ability at just about this time and could correctly sing the entire tune of "Aloha" at about eighteen months of age. This ability has persisted. He learns songs very easily and gets the tunes perfectly. As early as three years of age he showed unusual mechanical ability, spending much of his leisure time making or building something. This interest has continued. He uses tools with facility, making good use of the coping saw. At five years of age he heard his grandmother say that she had lost her carpet beater. Without consulting anyone he made a very serviceable carpet beater out of lathes. He has made a number of toy automobiles, carving them out with an ordinary jack-knife. The later ones are well constructed and run easily. Recently he was in need of a foot rest when shining his shoes, so he constructed one. His father helped him mark out the rest, but he sawed it out unaided. He seems to be able to make anything with his hands and has a strong interest in, and a desire to work with, tools or machinery of any kind.

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[2] Results in this test would have been higher if child had been taught to read. Tests involving reading had to be omitted.

Characteristics: J. R. J. has decidedly more discernment and more foresight than most children of his age. He tends to overconfidence in self and is very self-reliant, as is evidenced by a tendency always to depend on his own judgment. He is also very ready to take responsibility. He can dress and undress his little brother and his little twin sisters as quickly and carefully as his mother does. He is exceedingly strong-willed and very persistent. When he undertakes to learn something new, he keeps at it to the exclusion of everything else until he conquers it. At the age of four years and three months he decided to learn how to tell time. In one day, by persistent work under his mother's instruction, he could tell time correctly. He carried a Baby Ben clock around with him all that day. When he first learned to dance at kindergarten, he danced nearly all of his spare time at home. When he learned to whistle, he whistled until he nearly drove all about him frantic. He enters upon every enterprise with the same intensity and perseverance.

He has an excellent appreciation of form, a strong appreciation of music, and an unusual appreciation of the beautiful in art or nature. He is always anxious to excel and is rather sensitive to disapproval.

Play interests: He is decidedly popular with other children and is always a leader. He prefers playmates older than himself and of the same sex. When quite little, he had imaginary playmates, two of whom he named 'Don' and 'Gaul.' He prefers to play out-doors, is liked by other children, and is not considered queer, although more advanced mentally than the children with whom he plays.

Family history: Of Scotch-Irish, Canadian, and Colonial descent. The father, who is living, is a graduate of Stanford University and a successful engineer. His special hobbies are hunting, boating, canoeing, and collecting weapons. He is skilled in the use of firearms, sailing, and paddling. At one time he was a Deputy U. S. Marshal. The ancestors on the father's side were nearly all self-educated and held responsible positions. They were a very sturdy people and liked out-door sports, such as hunting and fishing. They were very honest and self-reliant. The father's father was a sea captain at the age of 22, but later became a manufacturer. He held several positions of honor and trust.

Most of the ancestors on the mother's side have been farmers. It is not known how much education the grandfather on this side had, but the grandmother reached the high school. The mother is a high-school graduate. In addition to this, she attended school one and one-half years in Paris and one and one-half years in Weimar. She holds a diploma from the *Alliance Francoise.* She speaks French and German fluently and taught French for thirteen years. Since marriage, she has devoted herself to her family and home. She began teaching the boy French when he was about three years old. During the summer vacation before his entrance to the fourth grade, she formed a class consisting of the boy and two of his companions and gave them three private lessons weekly. Since the beginning of school, she has given them two lessons weekly. This is done in addition to taking care of the home and four children, two of whom are tiny babies.

V. Girl, R. W.

This case is illustrative of exceptional musical talent, combined with a marked degree of general mental ability. The heredity is quite unusual. There are many features of the child's personality which make her story one of unusual interest and suggestiveness.

Two previous reports of R. W. have already appeared. The first as Case D-7 in Dr. W. T. Root's monograph. The second in Lulu M. Stedman's *The Education of Gifted Children.* Her fascinating story of this unique child should be read in connection with our report. We aim here merely to bring up to date the account of some interesting recent developments bearing upon this child's special abilities in music.

Early educational training: Her early training was conducted by her mother at home, with the exception of three months in a Montessori school from which she derived relatively little benefit. She early learned, and could recite excellently, a large number of stories. She also acquired with ease a large repertory of songs. She learned to read at about the age of seven by a few weeks of intensive private instruction.

She entered the fifth grade at the age of eight. With the exception of something less than three months in this grade, her entire schooling has been in a room for gifted children. She has never attended more than half-day sessions, devoting the other half to her music. Of the four years since she entered this room, she has been out of school altogether for one half year. In spite of this limitation of time, she completed the work of the eighth grade before she was thirteen years of age.

Mental test records:

Stanford-Binet

C.A. 7	M.A. 9- 5	I.Q. 134.5	(Root)
C.A. 9	M.A. 12-10	I.Q. 141	(Waddle)
C.A. 10-9	M.A. 15-10	I.Q. 147	(Waddle)
C.A. 12-7	M.A. 17- 8	I.Q. 140	(Stedman)

Terman Group Test, Form B

C.A. 12-4 Score 160 M.A. 17-2

Army Alpha, Form 8

C.A. 11-7 Score 103 M.A. (15-10, Kohs-Proctor)
(16- 8, Army Norm)

Stanford Achievement test: Her scores in this test, given at the age of 12-7, show the following subject-ages.

Reading	17-2	History	17-7
Arithmetic	13-5	Language usage	16-9
Nature and Science	16-9	Spelling	15-2

Composite Educational Age 15-9

At 13-5 a repetition of the same test gave subject-ages as follows:

Reading	15-2	History	16-1
Arithmetic	15-10	Language usage	17-4
Nature and Science	15-6	Spelling	15-6

Composite Educational Age 15-8

Special musical ability: R. W.'s interest in, and capacity for, music was apparent before she was two years old. It was shown first in the facility with which she learned songs. She turned to the piano at the age of five. She displayed ability in musical composition and improvisation as early as six years of age. Between this age and that of eight she made several public appearances, which included the playing on the piano of some of her own compositions. At this age she showed remarkable understanding of musical technique, of the elements of harmony and composition, and a marked degree of promise as a musical artist.

At the age of eight she turned her attention to the violin. Since that time, she has devoted herself intensively to this instrument with remarkable results. Elman, who heard her play after 18 months of training on the violin, and Kubelik, who heard her after she had spent two and one half years on her chosen instrument, both pronounced her work very promising and predicted for her a brilliant future.

At eleven years of age, after three years of training, she was presented in public recital to an enthusiastic Los Angeles audience by Mr. L. E. Behymer, local musical impresario. Subsequently, she appeared a number of times locally, in the meantime devoting herself to intensive preparation for a *début* in New York.

On October 5th, 1923, she appeared in a violin recital at Aeolian Hall, New York, where so many of the now famous artists have made their *débuts.* She was presented by S. Hurok, manager for Gluck, Zimbalist, Pavlowva, Elman, Chaliapin, and others, who sponsors only exceptional artists of real achievement. Almost without exception, the artists presented by Hurok have been of foreign birth or ancestry. It is of unusual significance, therefore, that he consented to present R. W., whose ancestry on both sides of the house to the last member is American since before the time of the Revolution. She is, in fact, a Daughter of the Revolution by right. Her future will, on this account, be watched with great interest for the bearing it has upon the question: ''Can America produce musical talent of a high order?''

At the time of her *début* in New York, R. W. was just a little past thirteen years and three months of age. She played an exacting and difficult program and won very favorable comment from a large number of musical critics. The audience was an unusual one for the *début* of a child. Among those present were Godowsky, Borowsky, Seidel, Saslovsky, S. S. McClure, Prince Laxarovich of Servia, and many representatives of the music clubs, the D. A. R., and other organizations. The way in which her program was received amply bore out the earlier judgment of her violin teacher, Gregor Cherniavsky, and others who have followed her development carefully for the past five years, that in her we have a musician of rare ability and promise. On October 10, she played by invitation for a half hour over 'WEAF' (American Tel. and Tel. Co.), one of the largest and finest radio stations in the country.

She took up her school work again about November first and is preparing intensively for a repetition of her New York program in Los Angeles on December 14.

VI. Girl, J. M.[3]

It has been interesting to watch the school history during the past four years of a child with an I. Q. of 190, in a school system operated on the plan of individual instruction and individual subject promotions. The child, J. M., is an attractive, plump, healthy little girl, now doing good work in the 8th grade at the age of 10½ years. Had we not checked her in the seventh grade and given her a greatly enriched curriculum, she would probably now be in the high school. She has never been exploited and few people know how high her I. Q. is.

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[3] Contributed by C. W. Washburne, Superintendent of Schools, Winnetka, Illinois.

Family: J. M. comes from a good home. Her father was educated as an electrical engineer, but has for a number of years been in the investment banking business. His score on the Army Alpha test is 149, placing him well up in the 'A' class. He was born when his father was 47 and his mother 35. His father (J. M.'s paternal grandfather) was an architect who attended Edinburgh University, and was trained in the Manchester School of Science. He in turn (the paternal grandfather) was the fourth child, born when his parents were between thirty and forty; his father (J. M.'s paternal great grandfather) was an achitect and ship builder, a man who laid out factories, and came from a line of builders.

J. M.'s paternal grandmother was an English woman, educated by her aunt, who had advanced ideas on what a girl should study. She was the second child of a man who dealt with building materials.

J. M.'s mother is a woman of intelligence and refinement. Her standing on the Army Alpha test is 134 points, just short of 'A.' She is the daughter of a man who was first a teacher, then a merchant, mayor of a small southern town for 18 years, and very wealthy. J. M.'s mother was born of his second marriage when he was 66 years old and his wife 37. He himself was the son of a planter, coming from a line of southern planters.

The maternal grandmother was the daughter of a college professor, who in turn was the son of a physician and surgeon, coming from a long line of physicians. The maternal grandmother's mother came from a line of wealthy Delaware farmers.

J. M., herself, was born when her mother was 30 and her father 29. It is a rather striking fact that for three generations at least, J. M. and her progenitors were born after their parents had reached the full maturity of 30 or more years of age. It is interesting, too, that the coming together of two high-class and successful lines has brought about a child of intelligence far superior to that of her parents.

Physically, J. M. is 54½ inches tall and weighs 88½ pounds. The normal weight for her age and height is 73 pounds.

School record: She entered the Chicago schools in the first grade in September, 1919. She was immediately rejected by the first-grade teacher as knowing too much for that grade, and was placed in the second grade, where she remained until the following April, when her parents moved to Winnetka. She entered the second grade in the Winnetka schools and easily finished the second-grade work by June. Her reading, tested by the Monroe and Gray tests, was up to fifth-grade standard when she reached the third grade, and had reached sixth-grade standard by December, 1920.

It took her from September, 1920, to March, 1921, to complete the third-grade work in arithmetic and spelling, and until May 10th to reach the promotion standard in writing. Then she spurted. Between March first and May 10th she did all her fourth-grade spelling. Between March first and May 17th she did all her fourth-grade arithmetic, and by June 15th she had reached the promotion standard and was ready for the fifth-grade in both writing and language.

Entering the fifth grade in September, 1921, she slowed up a little. By the end of the year she had not reached the sixth-grade standard in writing. Her fifth-grade spelling, which she began in May, was not completed until January. Her arithmetic, begun in May, was not finished until March, 1922. She was still slower in formal language, requiring over a year to complete the fifth-grade course. She began in April, 1921, and finished in May, 1922. It is true, however, that during the first part of this time, from April to June, 1921, she was carrying a double language course, finishing the fourth-grade and beginning the fifth-grade work simultaneously. And when in May, 1922, she began the sixth-grade work, she shot through it in two weeks.

June, 1922, found her, therefore, doing advanced sixth-grade reading, through with sixth-grade spelling, almost through with sixth-grade arithmetic, and promoted to the seventh grade in language. She was then nine years old.

In spite of the fact that she was so clearly ready for seventh-grade work in the fall of 1922, we hesitated about having her come from the lower grade school to our junior high school. She was smaller and younger than any of the children in the junior high, and we felt that she was already so far advanced that still more progress was perhaps undesirable. But she had formed a warm attachment for two girls a year or so older than herself, both possessed of high I.Q.'s, and she felt that there would be nothing for her to do in the sixth grade, if we held her back. This was so obviously true that we admitted her to the junior high school with an agreement that she would remain there until she was twelve years old.

We felt that while she doubtless could do the work of the junior high school within a year, or at the most in a year and a half, since our junior high contains only the seventh and eighth grades, she ought not to go to the senior high school too young. We agreed to give her a widely enriched curriculum of electives and special courses, to keep her active and happy for three years. But it didn't work!

When she found that no effort on her part would get her through any sooner, she stopped making effort. The end of the first year (June, 1923) found her with 7th-grade cooking, 7th-grade art, and 7th-grade pottery, all incomplete. She had taken up general science toward the end of the year, and of course had not finished it, either. She had, on the other hand, completed all of the 7th-grade English and arithmetic, including some advanced work; had done exceptionally well with French. In dramatics, she first had a know-it-all attitude, owing to her mother's success in amateur theatricals, but later did very good work. In social studies she had been inclined to superficiality, trusting to her quick grasp on a single reading of the material (Rugg's *Social Science Pamphlets*) and doing little real thinking. But she was interested, and finished the course within the year.

The general feeling of the teachers, and of J. M. herself, who was charmingly frank about it, was that she had 'loafed on the job' a good deal, had been over-confident, and had 'let down' generally when the stimulus of rapid advancement was taken away. This gives some inkling as to what would have happened to her in a regular school system, where the class lock-step is the rule.

This year J. M. is taking a straight eighth-grade course with one elective, and is tieing up the loose ends left undone at the end of last year.

Social and play interests: Socially, J. M. has grown greatly in the last year. One instance will suffice to illustrate this growth.

She is a poor basketball player. But our effort in athletics (which are almost entirely intramural) is to have every child on some team. J. M., therefore, played on a team, but made them lose so many games that her team mates asked their captain to make her a substitute. This was done. J. M. sulked, and, after a week, asked her mother to get her excused from basketball. Mr. Beatty, the principal of the school, persuaded the mother that it was a good thing for J. M. to have to occupy insignificant and subordinate positions once in a while, and that the school was working hard to develop in her a sense of sportsmanship. He reminded the mother that J. M. had wanted to stop dramatics when given a subordinate part, and had cried when, in the French class, she had not been allowed to play Goldilocks. The mother agreed and J. M. remained in the basketball class.

Under the influence of her teachers, she began to get an idea of good sportsmanship and team spirit. This showed in the final game of the season. Her team was playing another for the championship of the school. One of the forwards was absent, and J. M. was playing forward. Her relative smallness, and her younger age resulted in her playing a poor game, and her team was losing. Just then the regular forward, in street clothes, appeared as a spectator. J. M., during a minute of time out, ran to her, told her to get into her 'gym' suit and take her place on the team. She sacrificed her desire to play to the welfare of the team. Her sacrifice won the game and the championship.

The growth of this spirit, the child's strong desire to move forward with the children who are now her friends, and the undesirable effect on her of our last year's experiment in holding her back regardless of her effort or ability to go forward, have resulted in our decision to let her graduate this coming June.

Her parents, however, have requested that we keep her in our junior high school for a post graduate year, because they feel that the influence of this school is needed by J. M. We shall, therefore, try to provide a special course for her next fall. If we find that it does not work out successfully, we will enter her in the senior high school in February, 1925. If, on the other hand, we find that we can give her the sort of education that will be helpful to her in our junior high school and that she responds rightly, we shall hold her here until June, letting her enter the senior high school at the age of twelve and one-half years.

Interpreting and summarizing our experience with J. M.: Our system of individual instruction has permitted her to make full use of her intellectual ability. Where we tried to depart from it to prevent her progress from becoming too rapid, she showed a lack of interest and in some parts of her school work she did not work up to capacity, and even became to a slight extent a discipline problem. Given, however, an incentive to first-class work and the training in social behavior which we are trying to give in our junior high school, J. M. developed successfully and well. On the whole, our system has enabled us to deal with her flexibly and as an individual. It has prevented us from prolonging our mistakes. Probably no system, or uniform plan, can be made to fit children of such exceptional mental endowments. The most we can hope for is a flexibility which will enable us to deal with such children as individuals, feeling our way as we go along.

CHAPTER XII

MISCELLANEOUS EXPERIMENTAL AND STATISTICAL STUDIES OF GIFTED CHILDREN

A. INTRODUCTION AND SUMMARY

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The special treatment of gifted children has arisen in part in a different way from the special treatment of defective or backward children. The demand for the special treatment of defective children arose from the necessities of the practical situation. Defective children failed in their work, were retarded in school, and were finally eliminated before completing the school. This forced the problem of their education upon the school administrator. The desirability or necessity of special treatment for gifted children has arisen out of the scientific study of the intellectual and physical capacity of these children and is based upon a logical process of inference, which leads to the conclusion that their nature demands special treatment. This general conclusion that exceptional ability should be given special treatment is supplemented by the inference that the progress which exceptional children make in the school does not comport with their superiority in intellectual capacity. This discrepancy is sometimes expressed in the statement that gifted children are actually retarded to a greater degree than are defective children. This retardation, of course, only comes out when we compare their potential progress with their actual progress.

The studies which are included in this section are in part such as give evidence, of the type which has been described, that special treatment is desirable. They give information concerning the physical as well as the mental capacity, and the attainments of gifted pupils in school work. From facts of this sort we may draw inferences concerning the sort of treatment which gifted children should have in school.

Such inferences as have been mentioned, however, do not satisfy our demand for scientific evidence concerning the efficacy of special treatment. In the case of defective children this evidence may be obtained by a comparison of the progress which these children make in special classes or under the other forms of special treatment with the progress which they make or fail to make when they remain in the regular grade or are given no special attention. In the case of gifted children we may obtain the same kind of evidence by securing records of the attainments of children who have been given some special form of treatment and comparing them with children of equal native capacity who have been allowed to remain in their grade and have been given no special opportunity.

The chief type of evidence of the benefit to be derived from special treatment of gifted children, in the past, has consisted in records of the rapid progress made by segregated classes in the elementary school. The records of such rapid progress do not, to be sure, give us an exact measure of the difference between the progress made in special classes and the progress which the same children would make as a consequence of the ordinary practice of special promotion. The fact that greater progress is made in special classes, at least for a time, cannot, however, be doubted. Whether gifted children make greater gain under special treatment when their attainments are measured in other ways, is a question on which we have at present practically no evidence.

Several studies which are reported in this section make a beginning on the investigation of the problem. Their method, in the main, is to compare the scores on standard tests of gifted children in segregated classes with the scores on the same tests of children of equal ability who are in regular classes. A somewhat related problem is attacked in two studies of the effect of grade skipping upon subsequent school or college attainment.

The studies which attempt to appraise in a comparative way the effect of special treatment are followed by four descriptive accounts of the ways in which the instruction in the high school is adapted particularly to the needs of gifted pupils.

SUMMARIES OF THE SPECIAL STUDIES

Studies of Physical Capacity

We may summarize and comment upon the several studies in a little greater detail. The first two studies deal with the physical nature of gifted children. The first of these, by Mrs. Hollingworth and Miss Taylor, consists of the application of careful physical measurements to a group of gifted children and to another group of children of average intelligence who are like the first group in respect to race and environment. This report agrees with practically all the studies of this question, including those of Terman and of Baldwin, reported elsewhere in this volume, in indicating that intellectually gifted children are superior physically to average children and that these in turn are superior to mentally defective children. This superiority appears in the case of height, weight, weight-height index, and strength of grip. The greater superiority in right-hand grip over left-hand grip suggests the possibility that gifted children are more strongly right-handed than ordinary children, but the evidence is inadequate for more than a very tentative conclusion on this point.

Perhaps the chief significance of the facts which are presented concerning the physical superiority of gifted children is the indication that the intellectual superiority is something fundamental and not the superficial product of coaching or intellectual forcing. Regarding the question whether this fundamental superiority is to be ascribed wholly to heredity, or in some part to various environmental influences, or, if it is to be ascribed to environment, in what measure, are questions on which our present evidence does not throw light. A discussion of this question would carry us far beyond the limits of our space. The fundamental character of the traits in question strongly suggest, however, that they are, in large part at least, hereditary.

Hoke's study deals with another physical characteristic of gifted children, namely, mental balance. He finds, on the basis of examination by psycho-pathologists, that accelerated children are nervous to the number of 30.9 percent. On the face of it, this seems like a startling fact. Since no control group was used and we do not know what percentage of children who make regular progress would be listed as nervous by the same examination, however, we cannot tell what the significance of this finding is. Even in the case of physical defect, such as those of vision or of hearing, very widely different percentages may be found according to the method and standards of the examination. These findings at least indicate the need for further study.[1] The continuance of the investigation should include the examination and comparison of bright children who are accelerated, bright children who are not accelerated, and of children of ordinary intelligence. It would then be possible to determine whether there is any difference between the groups, and if so, what the cause of the difference may be.

Attainments of Gifted Children

Many studies of recent years have shown the enormous difference in the attainment in school of various children of the same age and experience. In this report we have four studies which add to the data on this subject.

Washburne's study gives an unusual opportunity to follow the progress of children of different degrees of intelligence because the children on whom he reports are permitted to progress at individual rates. He gives a preliminary report on the progress made by 90 children who are in the upper quarter in the rating by intelligence tests, in comparison with the other three quarters. The significant finding is that, while these children on the average make more rapid progress than average or dull children, "the lower half of them progress less rapidly than an equal number of children from the top of the middle group." Moreover, there is wide variation in the rate of progress of these gifted children in the various school subjects. These two types of variation are so great that Washburne holds that the child's individual capacity to do school work can be given adequate opportunity only by individual instruction. It may be remarked that the lack of correspondence between progress and I.Q. might be taken care of by classifying on the basis of achievement. Whether subject variation can well be allowed for by classification under departmental instruction is a matter for discussion.

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[1] Cf. in this connection the conclusions reported by Terman for a much larger group which do not agree with Hoke's conclusions.—EDITOR.

Miss Patrick's study gives in detail a statement of the high attainment of the children of a segregated class. This class was taken from the middle grades of the elementary school and was selected on the basis of intelligence. The attainments are measured in terms of the scores on educational tests. Similar material was gathered for a second class, but for lack of space was omitted. The report does not attempt to determine the extent to which the attainments of these pupils is due to their segregation in comparison to their high intelligence. In general, Miss Patrick found the subject quotients to be as high as the intelligence quotients; that is, the superiority in the pupil's attainments was equal to the superiority of their intelligence.

It has usually been found that the subject quotients are somewhat lower than the intelligence quotients in the case of superior pupils. This has been ascribed to the fact that these pupils do not have opportunity, under the ordinary conditions of the school, to measure up to their full capacity. An exception to this rule in the case of the Louisville children is found in spelling and nature study, in which the subject quotients are below the intelligence quotients. We may conjecture that the lower standing there is due either to the lack of emphasis upon these subjects in the case of this group or to a lack of correlation between achievement in these subjects and intelligence as measured by the intelligence tests.

Another suggestion that the achievement of these pupils is in part due to their segregation comes from the fact that Group I, which is not here reported, and which had one and one-half years' more segregated instruction than did Group II, had a higher reading efficiency. These inferences, however, are rather indirect and we must conclude that the extent to which superiority of these children is due to segregation cannot be determined from the data at hand.

The study by Miss Cobb and Miss Taylor is similar in significance to that of Miss Patrick. It shows that the individuals of a segregated group of bright children are equal in educational achievement as measured by an educational test to their intelligence standing. In this case, however, the educational achievement was measured by a composite educational test, the Stanford Achievement test, rather than by individual tests. The high correlation between standing in the intelligence test and the achievement test, .80, is another expression of the correspondence between intelligence and achievement.

An interpretation of this parallelism, however, is somewhat clouded by a doubt which is raised by the very high correlation. We are led to inquire whether the correlation is due wholly to a correspondence between achievement and intelligence or whether it may not be due in part, and perhaps in considerable part, to the fact that the intelligence test and the achievement test really are measures of the same thing. To put it in another way, the question is whether our tests actually differentiate between intelligence and achievement as much as we sometimes imply they do.

Benson's study compares the attainments of a class of bright pupils in reading, spelling, and arithmetic with classes of children who are in the corresponding grade in the school. The study also indicates the saving of time which these children have made by virtue of their rapid progress. The saving of time is clear. The segregated group spent, on the average, 376 days in school, and the parallel class 523 days. The average age of the segregated group is eight years, five months, and of the regular class, nine years, eight months.

Concerning the superiority of attainment in the segregated class, however, the evidence is not so clear. The numbers are too few for certain conclusions, but a suggestion may be obtained from the few cases at our disposal. Table I gives the achievement scores of two groups of pupils, one of them from the segregated, or selected, class, the other from the unselected. Pupils have been chosen so as to be as nearly as possible equal in intelligence quotient and age. It will be seen from an inspection of the averages that the attainments of the pupils of high I.Q. in the unselected class

TABLE I.—COMPARISON OF THE ATTAINMENTS OF GIFTED PUPILS IN SELECTED AND UNSELECTED CLASSES

I. Q.	Age	Reading Score	Spelling Score	Buckingham Arithmetic Score	Woody-McCall Score
		Selected Group			
131	9	37	13	27	17
131	9	45	54	45	13
131	8— 8	38	30	27	10
119	8— 1	35	37	38	16
110	8—11	38	15	30	13
105	9— 0	41	16	33	7
Average........		39	26	33	12
		Unselected Group			
131	8— 9	45	41	38	12
130	8— 9	40	28	48	11
117	7—11	43	9	39	12
112	8—10	38	5	36	7
106	9— 3	37	4	39	7
Average........		41	17	40	10

are practically equal to the attainments of the pupils of the same I.Q. and age of the selected class. We shall refer to this point in the discussion of the next section.

Comparison of the Attainments of Children in Special Classes With the Attainments of Gifted Children in Ordinary Classes

We come in this section to the heart of our question. It has already been introduced and we may proceed at once to a consideration of the facts.

The first report is that by Miss Engel. In this report she compares the school marks of groups of children in the various subjects of study. The groups compared are, respectively, those who take these studies in the special class of gifted children and pupils who are taking them in the ordinary classes, but who give evidence of superiority by the fact that they are markedly accelerated. The question which is answered for each subject by her table is this: Do the segregated children in this subject stand higher or lower than the gifted children, or accelerated children, who are not segregated into a special class? What we really have here, then, is a comparison of segregation and acceleration as measured by school marks. The school marks, be it further noted, are those which were made by these pupils in their *subsequent* school career.

If we confine our attention to those groups in which there were ten or more pupils in both the segregated and the unsegregated classes, we have the situation which is represented in Table II.

TABLE II.—COMPARISON OF SUBSEQUENT SCHOOL MARKS OF SEGREGATED AND UNSEGREGATED PUPILS

Subject	Segregated Higher	Control Higher
Mathematics	2	3
Social Science	3	3
Science	0	2
English Literature	7	1
Languages	2	4
Commercial Subjects	1	3
Art	1	0
Vocational Subjects	4	4
Health	1	2
Total	21	22

This table shows the number of instances in which the segregated children were higher and the number in which the control groups were higher. It will be seen that the segregated group is distinctly higher in English, as Miss Engel points out. The control group, on the other hand, is higher in mathematics, science, languages, commercial subjects, and 'health.' These data, on the face, at least, would seem to argue that ordinary acceleration is as favorable to the subsequent attainments of gifted children as is the formation of a segregated class such as the one conducted in Detroit.

The next two studies, by Cook and Moyer, deal with segregation in the high school. In both cases a comparison was made by giving the same test to groups of children who have been taught in segregated classes and to those who have been taught in mixed classes. The aim of the studies was to determine whether segregation according to intelligence improves the attainments of the segregated pupils in the high school, and if so, whether it is more favorable to pupils of high ability or of low ability.

Cook's experiment is a carefully controlled study of the effect of segregation in the case of 495 high-school pupils in the subjects English, history, and geometry. All the factors were carefully controlled. The segregated and mixed classes were taught by the same teacher, at the same time of day, with the same subject matter and were given the same tests. Improvement was measured, as well as the ultimate grades and scores. The results were not uniform. In the case of geometry, English III, and English I, dull pupils attained somewhat higher scores in the segregated than in the mixed classes. In ancient history, on the other hand, the dull pupils lost, while the bright pupils profited.

The results of Moyer's experiment do not agree with Cook's. He compared the attainments in standardized tests of segregated pupils, and pupils of similar ability in mixed classes, in algebra and Latin. He found that superior and medium pupils in general seemed to benefit by segregation, but that the dull pupils did not. Furthermore, he found that if pupils were misplaced, that is, if they were in segregated classes which did not correspond with their capacity, the pupils who were in classes which were higher than their ability would warrant, profited, whereas those who were misplaced downward suffered.

It appears from these studies, as well as from that of Benson, which has already been referred to, that segregation does not have an effect on the achievements of pupils which is at all comparable with the effect of differences in intelligence on achievement. To be sure, we cannot say that segregation is of no benefit. It is quite possible that the chief value in segregation is that it makes possible a modification of the curriculum to suit the pupils of different ability, and it is to be particularly noted that such modification was not made in the cases which are here reported. The parallel groups pursued the same courses, with the exception of those in Miss Engel's study, and we do not know in that case how far the curriculum was modified. In general, the parallel groups pursued much the same subjects and in the same manner. The question remains open then, as to how far an advantageous modification of the curriculum for the various groups may be made, and to what extent such a modification will result in higher achievement.

Studies of the Careers of Accelerated Children

One of the oldest methods of giving differential treatment to bright children is to accelerate them in the school, although this acceleration is never equal in amount to that which would be warranted by their superiority in intelligence, assuming that they ought to be with children of equal mental age. We have already seen from Miss Engel's study that acceleration does not seem to make a bad showing in contrast with segregation when measured by subsequent attainments. We have here two additional studies on the effect of acceleration, that by Haney and Uhl and that by Martin. Haney and Uhl studied the achievements of accelerated students in the college, and Martin studied their achievements in the elementary grades subsequent to those in which they were given special promotion.

Haney and Uhl show that college students who enter young do work which is about equal, as measured by their college marks, to the average, and that the usual number fail. An analysis of the accelerated students who fail, however, shows that they also did poor work in the high school. Their acceleration was therefore not justified by their previous work. The conclusion which follows from these facts is that acceleration should be based only upon the demonstration of superior ability.

Martin's study shows the same thing for elementary-school pupils. In general, the pupils who maintained their standing, after skipping grades, were the ones of high I.Q., whereas those who fell off in standing were the low-grade students. The correlation between the I.Q. and success after skipping is much higher than the correlation between the mark in previous work and success after skipping.

The conclusion from all of our evidence seems to be that, while grade skipping as a practice is not as detrimental as we have sometimes been inclined to think it, and in fact, may not be detrimental at all, its result is dependent upon the ability of the pupil. Many pupils are allowed to skip grades who are not qualified to do so, as measured by their later work. Furthermore, it would be possible by means of intelligence tests to determine beforehand with considerable accuracy which pupils will profit and which will not.

Special Studies of Gifted Children in the High School

Space will not be taken here to refer in detail to the four studies which are included under this section. It is believed that they will be found useful as descriptions of the actual procedure which has been found to be helpful in specific administrative situations. The analysis by Reavis of the cases in which the various types of treatment are appropriate is particularly to be commended.

B. STUDIES OF PHYSICAL CONDITION AND GROWTH

B 1. SIZE AND STRENGTH OF CHILDREN WHO TEST ABOVE 135 I.Q.

LETA S. HOLLINGWORTH AND GRACE A. TAYLOR
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(For the Committee)[1]

The purpose of this report is to present comparative data regarding the height, weight, weight-height coefficients, and power to grip of children 9 to 11 years old, who have been selected from the public school population of New York City solely by the fact that they test above 135 I.Q. (Stanford-Binet). In the first section of our report we present the data for size, and in the second section, the data for strength. For comparison with our Jewish children, we have used, with permission, the measurements of Jewish children made by Mr. Luis A. Tirapegui,[2] which have not yet been published. We have also made comparisons of our total group with the norms obtained by Baldwin for size, and by Smedley, for strength.

No resumé of the literature of anthropometry as related to mentality will be attempted here. We believe, from our perusal of this literature, that the morphology of children standing in the highest percentile for intelligence, by individual test, has not previously been discussed in comparison with groups identical in age, sex, and race, but differing greatly as respects intelligence quotients.

I. SIZE

1. Comparison with Children Measured by Tirapegui

Briefly stated, Tirapegui made measurements, including measurements of the variables mentioned above, on Jewish children

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[1] The present report is rendered as part of the work of a joint committee in charge of special classes for bright children, in Public School 165, Manhattan. The members of this committee are Mr. Jacob Theobald, Miss Jane Monahan, of Public School 165, Manhattan; Miss Margaret V. Cobb, Dr. Grace A. Taylor, and Professor Leta S. Hollingworth, of Teachers College, Columbia University. The work is being carried out in co-operation with The Division of Educational Psychology, of The Institute of Educational Research, at Teachers College. The clerical and stenographic work in connection with the report has been facilitated by funds granted through The Institute of Educational Research, by The Carnegie Corporation.

[2] Tirapegui, Luis A., *Comparative Variability in Anthropometric Traits of Normal and Feeble-Minded.* Dissertation, completed 1923. On file in Bryson Library, Teachers College, Columbia University.

9, 10, and 11 years of age, who had first been selected by means of mental tests to compose two prescribed separate groups. The object of this research is indicated by its title. The complete measurement of every subject is recorded in the text of Tirapegui's manuscript.

In one of Tirapegui's groups were children testing below 70 I.Q. (Stanford-Binet). They were all inmates of institutions for the feeble-minded in New York State. Pathological cases (cretins, congenital syphilitics, hydrocephalics, etc.) were carefully excluded from the group, in measuring. Height was taken in stocking feet, to the nearest tenth of a centimeter. Weight was taken in ordinary indoor clothing, to the nearest tenth of a kilogram. Mental tests had been made by the psychologists resident at the institutions. Measurements of size were made during the summer months. This group is called Group C in our comparisons.

In Tirapegui's other group were children testing between 90 and 110 I.Q. (National Intelligence Test). Inasmuch as the mental measurements in this group were made by means of a group test, the data in this respect are not quite of the same order of precision for these children as for those of the two other groups. The children were drawn from the regular public school population of Philadelphia. They, also, were measured for height in stocking feet, to the nearest tenth of a centimeter. Weight was taken in ordinary indoor clothing, to the nearest tenth of a kilogram. The measurements of size were made during the winter months. This group is called Group B in our comparisons.

The children who compose our own group test over 135 I.Q. (Stanford-Binet). They are members of the two Special Opportunity Classes in Public School 165, with the study of which the committee offering this report is concerned. These classes have in them 45 children who are Jewish (both parents being Hebrew). They have passed the ninth, but have not reached the eleventh birthday. Measurements of size in this group were made in October. Weight was taken on a Toledo no-spring scale, in ordinary indoor clothing, to the nearest tenth of a pound. Height was taken with the steel stadiometer attached to this scale, to the nearest eighth of an inch. The children did not remove their shoes; but the height of a random sampling of twenty-five heels was taken, and the average amount thus obtained (.7 inch) was subtracted in making comparisons. In this way the heights which appear in the tabulations of this report for the children in Group A are heights in stocking feet.

It should also be stated that 4 pounds were subtracted from the recorded weight of each child, in all groups, in obtaining the weight-height coefficients, and in the comparisons of weight with Baldwin's norms. (The ordinary indoor clothing of children of these ages weighs about 4 pounds).

We have, therefore, 45 Jewish children, selected by mental tests from the highest percentile for intellect, who are precisely comparable in race, sex, and age with Tirapegui's Jewish children, in each of his two groups, separately. We have made the comparisons in the following manner.

TABLE I.—DISTRIBUTION OF HEIGHT IN INCHES, OF THREE GROUPS OF JEWISH CHILDREN, 9-11 YEARS OF AGE, AGE AND SEX BEING CONSTANT IN THE THREE GROUPS

Inches	GROUP A I. Q. above 135 (Median I. Q. 151)	GROUP B I. Q. 90–110 (Median I. Q. 100)	GROUP C I. Q. below 65 (Median I. Q. 43)
59	1	–	–
58	–	–	–
57	3	–	–
56	4	1	–
55	4	1	1
54	8	2	3
53	2	3	4
52	9	8	2
51	8	10	3
50	3	7	6
49	1	8	10
48	2	5	3
47	–	–	3
46	–	–	5
45	–	–	2
44	–	–	–
43	–	–	1
42	–	–	1
41	–	–	–
40	–	–	1
Total	45	45	45

Each individual of Group A was matched by sex and by age (in all but five cases precisely to the month, and in all other cases within three months, plus or minus), with an individual from Group B, and with an individual testing at or below 65 I.Q. from Group C. This procedure finally yielded three groups, each composed of 45 Jewish children, matched exactly for sex, and for age within a month; differing in a prescribed manner as respects intelligence; but varying as might be in size, since no attention whatever was paid to size in matching. Tirapegui's measurements of size were then transmuted into inches, and into pounds. The measurements thus tabulated were distributed and compared, as appears in the accompanying tables and graphs.

It has been popularly supposed that extremely bright children as a group are morphologically inferior. This notion probably has its origin in the tendency to believe that "nature is just," and works by a law of compensation. The comparisons in our tables and graphs reveal a marked morphological superiority of the very intelligent over those of average ability, and a very great superiority of the gifted over the stupid, in terms of medians, and of overlapping upon medians. The three groups form an ascending

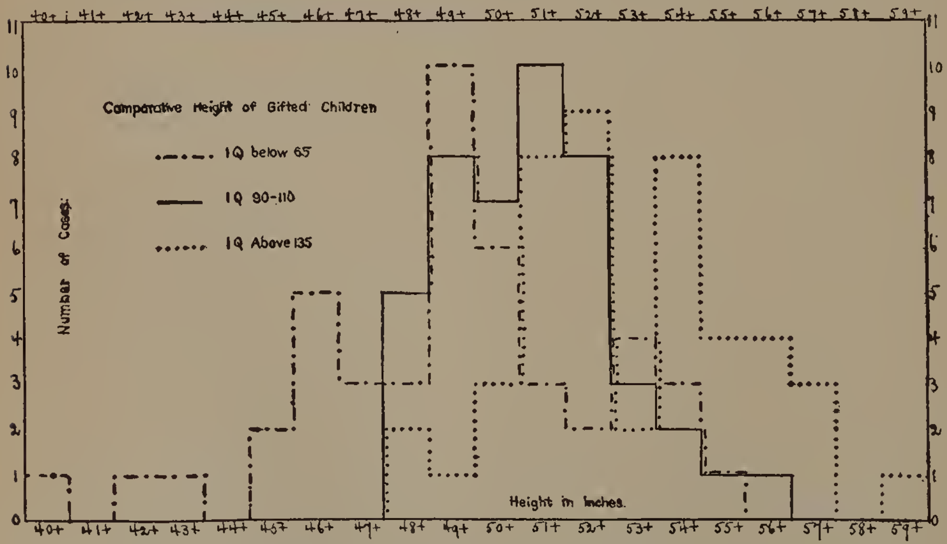

FIG. 1.—SHOWING COMPARATIVE DISTRIBUTION OF HEIGHT IN INCHES, OF THREE GROUPS OF JEWISH CHILDREN, SELECTED SOLELY BY MENTAL TESTS, AND MATCHED, GROUP FOR GROUP, BY AGE AND SEX

TABLE II.—DISTRIBUTION OF WEIGHT IN POUNDS, OF THREE GROUPS OF JEWISH CHILDREN, 9-11 YEARS OF AGE, AGE AND SEX BEING CONSTANT IN THE THREE GROUPS

Lbs.	GROUP A I. Q. above 135 (Median I. Q. 151)	GROUP B I. Q. 90–110 (Median I. Q. 100)	GROUP C I. Q. below 65 (Median I. Q. 43)
115—110	2	–	–
110—105	–	–	–
105—100	–	–	–
100— 95	2	–	–
95— 90	2	1	–
90— 85	3	1	–
85— 80	6	2	1
80— 75	5	1	2
75— 70	9	6	6
70— 65	4	10	3
65— 60	8	9	8
60— 55	3	9	13
55— 50	1	5	4
50— 45	–	1	6
45— 40	–	–	2
Total	45	45	45

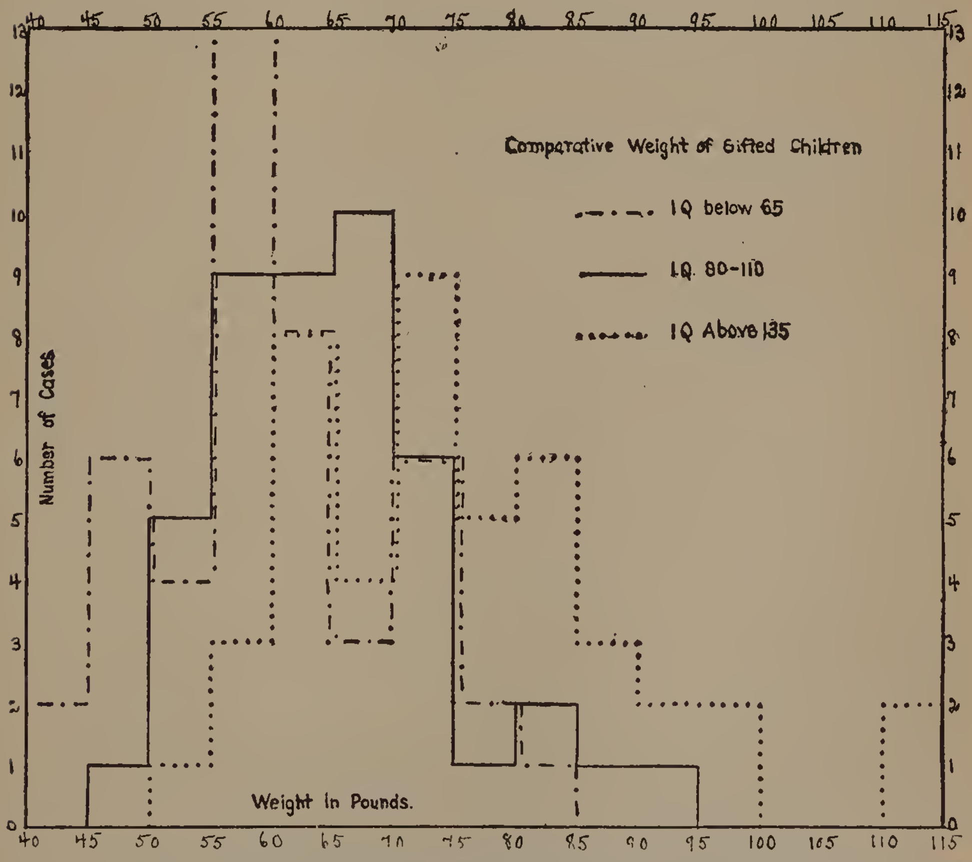

FIG. 2.—SHOWING COMPARATIVE DISTRIBUTION OF WEIGHT IN POUNDS, OF THREE GROUPS OF JEWISH CHILDREN, SELECTED SOLELY BY MENTAL TESTS, AND MATCHED, GROUP FOR GROUP, BY AGE AND SEX

TABLE III.—DISTRIBUTION OF WEIGHT-HEIGHT COEFFICIENTS OF THREE GROUPS OF JEWISH CHILDREN, 9-11 YEARS OF AGE, AGE AND SEX BEING CONSTANT IN THE THREE GROUPS

Wt.-Ht. Coeffs.	GROUP A I. Q. above 135 (Median I. Q. 151)	GROUP B I. Q. 90–110 (Median I. Q. 100)	GROUP C I. Q. below 65 (Median I. Q. 43)
210—205	1	—	—
205—200	—	—	—
200—195	—	—	—
195—190	—	—	—
190—185	—	—	—
185—180	1	—	—
180—175	—	—	—
175—170	—	—	—
170—165	3	—	—
165—160	—	1	—
160—155	1	—	—
155—150	1	—	—
150—145	2	1	—
145—140	3	3	2
140—135	3	2	—
135—130	8	4	5
130—125	5	2	5
125—120	3	5	3
120—115	4	7	4
115—110	5	6	8
110—105	4	7	3
105—100	—	3	5
100— 95	1	1	5
95— 90	—	3	2
90— 85	—	—	2
85— 80	—	—	1
Total	45	45	45

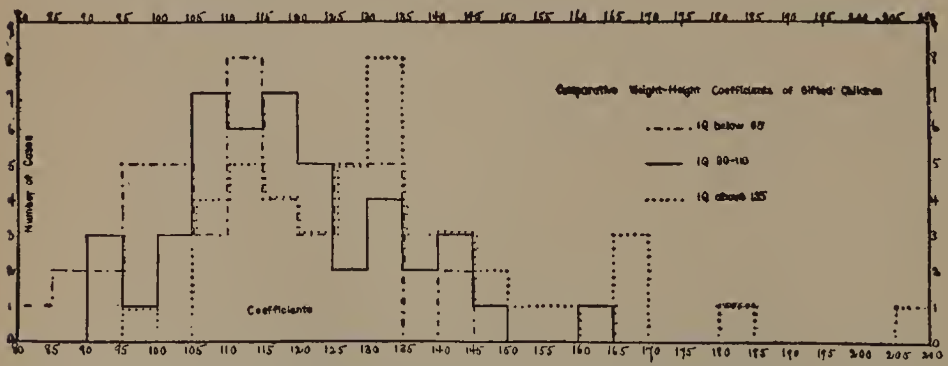

FIG. 3.—SHOWING COMPARATIVE DISTRIBUTION OF WEIGHT-HEIGHT COEFFICIENT, OF THREE GROUPS OF JEWISH CHILDREN, SELECTED SOLELY BY MENTAL TESTS, AND MATCHED, GROUP FOR GROUP, BY AGE AND SEX

TABLE IV.—SHOWING MEDIANS,* MEDIAN DEVIATIONS AND OVERLAPPING UPON MEDIANS, FOR GROUPS A, B, AND C

	Group A		Group B		Group C		Percent Group B Reach or Exceed Median of Group A	Percent Group C Reach or Exceed Median of Group A	Percent Group C Reach or Exceed Median of Group B
	Med.	M.D.	Med.	M.D.	Med.	M.D.			
I. Q.	151	9	100	8	43	10	0	0	0
Age (mos.)	117	4	117	5	116	4	58*	45*	45*
Ht. (inches) ...	52.9	1.6	51.2	1.2	49.6	2.1	20	18	28
Wt. (lbs.)	74.0	9.4	63.9	5.2	59.5	6.5	18	9	36
Ht.-Wt. Coeff..	1.31	.13	1.19	.10	1.14	.12	24	16	36

*Taking the twenty-third child in order of magnitude, as the median, (n = 45). As regards age in months, 53 percent of Group A reach or exceed the median child of Group A, since several children are just at the median age, to a month. The failures of exact correspondence in this respect of Group B and Group C are in terms of a fraction of a month. Weight includes indoor clothing. Height is in stocking feet.

series morphologically, from least gifted to most gifted. The probability that this result occurs from chance is very slight.

We believe that these clear-cut differences have been secured with the relatively small groups involved (1) because the selections are from the widest of opposite extremes, as regards intellect; (2) because the measurements, including those of intellect, were all carefully quantitative; and (3) because age, sex, and race were kept constant. It is difficult to meet all these requirements of sampling, even in a large, congested population. When, however, they have been fulfilled, the trend toward positive association between superiority of mind and superiority of body emerges. *The gifted are not small and weak, as is popularly believed. On the contrary, they tend to be large and also strong,* as appears from the comparisons of grip, which we are about to present.

A possible source of error in the comparison of Group C with the other two groups lies in the fact that the children of Group C all lived in public institutions at the time of measurement where physical nurture may possibly compare unfavorably[3] with the "home care" received by the children of Groups A and B. The comparison between Group A and Group B is, however, not subject to this possible source of error, since the children in both of these groups are living at home. The fact that the bright exceed the average, more than the average exceed the stupid, in size, suggests that the trend of comparison is valid throughout. Moreover, the stupid overlap slightly more upon the medians for weight-height coefficients of the other groups than they do for weight alone. *The stupid seem to be not so much ill-nourished as they are merely small.*

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[3] On the other hand, it is quite possible that the stupid children in the institutions have the advantage, in that they are constantly under skilled medical care, as concerns their physical well-being.

The amount of overlapping upon the median of Group A, in all three variables, shows the margin of error in inferring morphological status and mental status from each other, in the case of an individual drawn at random from the juvenile population. A few individuals from the lowest percentile of human intellect exceed the median for the highest percentile of human intellect, in given morphological traits. Nevertheless, the probability is great that an extremely intelligent child will also be tall and heavy, for his age, race, and sex.

2. Deviation from Baldwin's Norms

Baldwin's norms[4] are not derived from children homogeneous as to race. They are, however, limited to children in private and model schools in cities—the Horace Mann School, the Francis Parker School, and the Elementary School of Chicago University. Children in such schools form a selected group of superior intelligence. Pupils in the elementary grades of the Horace Mann School have a median I.Q. of about 117, indicating the extent to which they fail to represent the population at large. We have no doubt that Baldwin's norms are valid for selected children only, and fit only pupils in schools patronized by especially competent parents.

Deviations from Baldwin's norms were found and distributed for all our children above 135 I.Q., including now 56 children, regardless of race and of age, matching each against Baldwin's norm for age and sex. Thus are included all of the children in Group A, and in addition six Jewish children slightly under 9 years of age, and five Gentile children of the ages included in Group A.[5]

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[4] Baldwin, B. T., *Physical Growth of Children from Birth to Maturity.* University of Iowa. 1921.

[5] The great preponderance of Jewish children in our group is doubtless due to the peculiar segregation of children in private schools, parochial schools, and public schools, which obtains in New York City. We did not have access to private and parochial schools in making our selection.

The tables and graphs which follow show how our children testing above 135 I.Q. deviate from Baldwin's norms. Our group, with a median I.Q. of 153, is clearly superior even to the groups upon which Baldwin found his norms. That this excess is not due simply to race, that is, to the preponderance of Jewish among our children, is proved by the fact that the Jewish children of Group B above, do not reach Baldwin's norms (being public school children of ordinary intelligence).

TABLE V.—DISTRIBUTION OF DEVIATIONS FROM BALDWIN'S NORMS, FOR HEIGHT IN INCHES, OF CHILDREN TESTING ABOVE 135 I.Q. (STANFORD-BINET)

Amount of Deviation in Inches	Children Above 135 I.Q. Frequency
+5.5— 4.5	3
4.5— 3.5	2
3.5— 2.5	9
2.5— 1.5	6
1.5— 0.5	10
0.5—-0.5	5
-0.5— 1.5	7
1.5— 2.5	6
2.5— 3.5	4
3.5— 4.5	3
4.5— 5.5	1
Total	56

A comparison of the distributions shows that the children of our group who test above 150 I.Q. (n = 32) do not differ reliably in size from those who measure between 135 and 150 I.Q. (n = 24).

II. STRENGTH

1. Comparison with Children Measured by Tirapegui

The grip of children in the Special Opportunity Classes at Public School 165 was taken for the right hand and for the left hand with Smedley's dynamometer, to the nearest half kilogram, according to the procedure laid down by Pyle.[6] The Jewish children studied by Tirapegui had been measured in precisely the same manner. Our own measurements of grip to date yield 42

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[6] Pyle, W. H., *The Examination of School Children*, Macmillan, 1913.

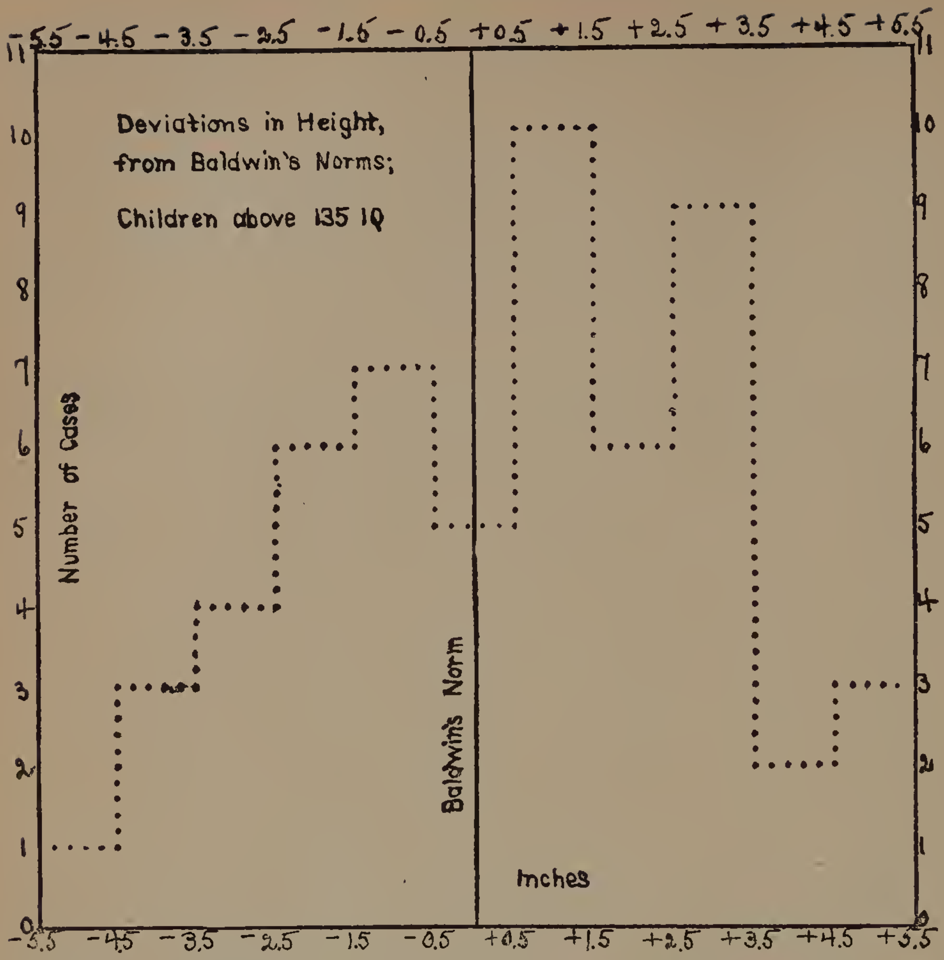

FIG. 4.—SHOWING DEVIATIONS FROM BALDWIN'S NORMS, FOR HEIGHT IN INCHES, OF CHILDREN TESTING ABOVE 135 I.Q. (STANFORD-BINET)

TABLE VI.—DISTRIBUTION OF DEVIATIONS FROM BALDWIN'S NORMS, FOR WEIGHT IN POUNDS, OF CHILDREN TESTING ABOVE 135 I.Q. (STANFORD-BINET)

Amount of Deviation in Pounds	Children Above 135 I. Q. Frequency
+55.5— 45.5	1
45.5— 35.5	—
35.5— 25.5	4
25.5— 15.5	5
15.5— 5.5	18
5.5——5.5	18
−5.5— 15.5	10
Total	56

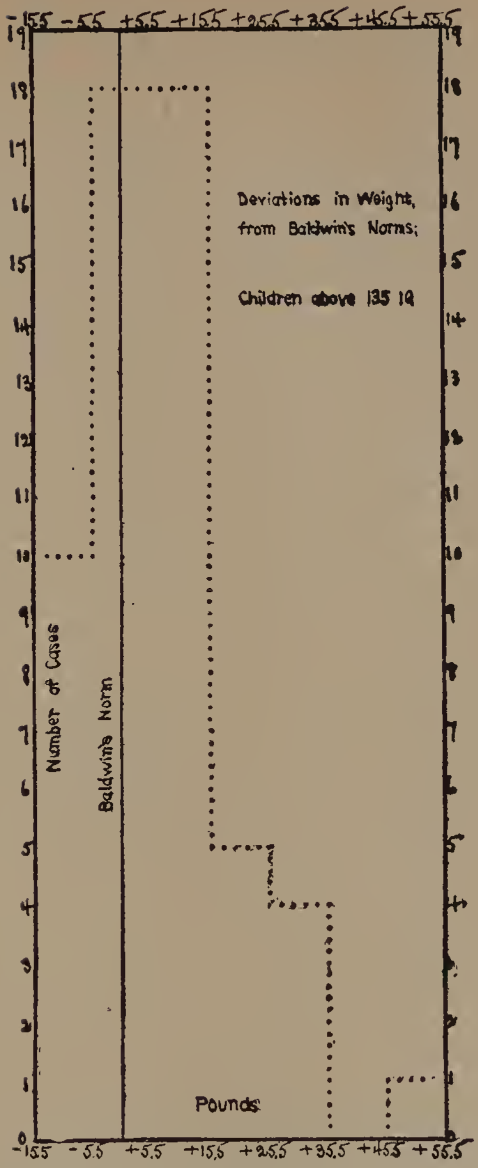

FIG. 5.—SHOWING DEVIATIONS FROM BALDWIN'S NORMS, FOR WEIGHT IN POUNDS, OF CHILDREN TESTING ABOVE 135 I.Q. (STANFORD-BINET)

Jewish children,[7] 9 but not 11 years of age, testing above 135 I.Q. (Stanford-Binet), who can be compared with children from Tirapegui's two groups, respectively. Comparison was made in precisely the same manner as in the case of measurements of size to

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[7] A few children were either absent or had sore fingers, when grip was taken.

TABLE VII.—DISTRIBUTION OF DEVIATIONS FROM BALDWIN'S NORMS, FOR WEIGHT-HEIGHT COEFFICIENTS, OF CHILDREN TESTING ABOVE 135 I.Q. (STANFORD-BINET)

Amount of Deviation	Children Above 135 I. Q. Frequency
+.95— .85	1
.85— .75	–
.75— .65	–
.65— .55	–
.55— .45	3
.45— .35	3
.35— .25	2
.25— .15	11
.15— .05	12
.05—–.05	8
–.05— .15	11
.15— .25	5
Total	56

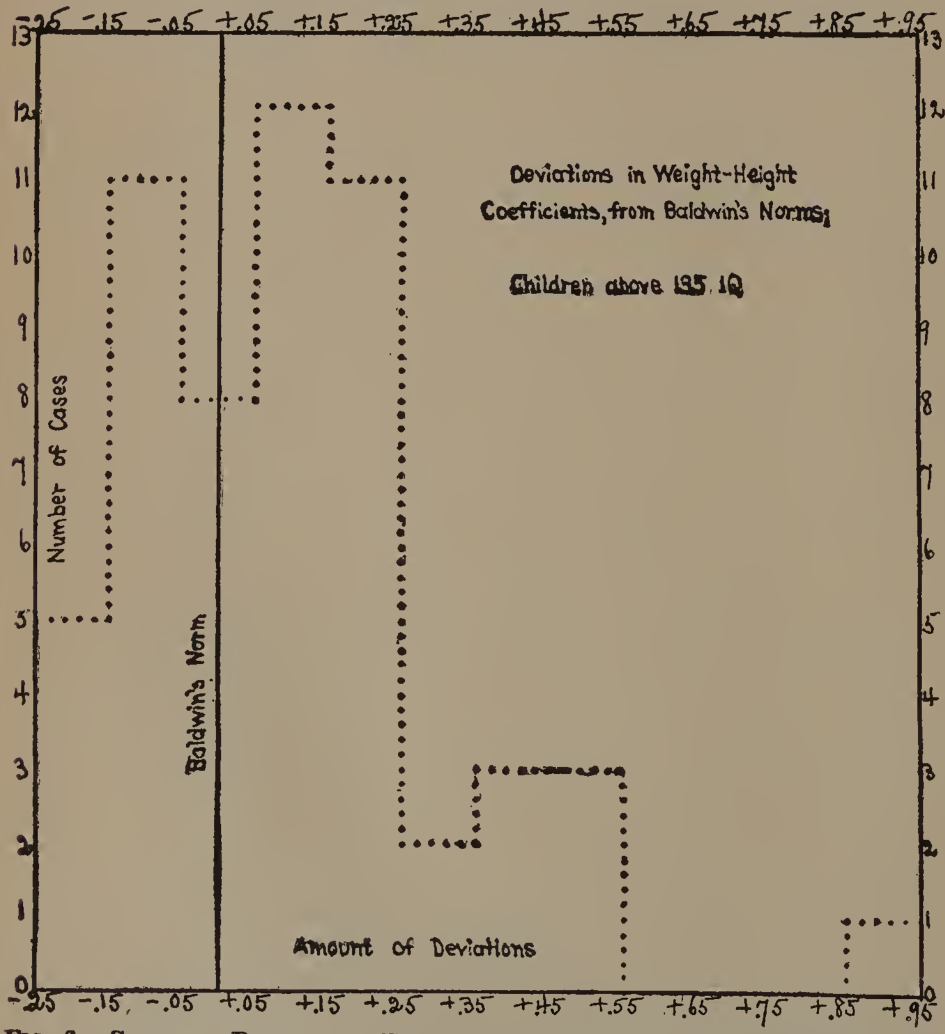

FIG. 6.—SHOWING DEVIATIONS FROM BALDWIN'S NORMS, FOR WEIGHT-HEIGHT COEFFICIENT, OF CHILDREN TESTING ABOVE 135 I.Q. (STANFORD-BINET)

TABLE VIII.—DISTRIBUTION OF STRENGTH OF GRIP, IN KILOGRAMS, OF THREE GROUPS OF JEWISH CHILDREN, 9-11 YEARS OF AGE, AGE AND SEX BEING CONSTANT IN THE THREE GROUPS

Kilos.	Group A I. Q. above 135		Group B I. Q. 90–110		Group C I. Q. below 65	
	R	L	R	L	R	L
24—23	1	—	—	—	—	—
23—22	1	—	—	—	—	—
22—21	—	—	1	—	—	—
21—20	—	1	1	1	—	—
20—19	3	1	—	—	—	—
19—18	2	3	2	1	1	—
18—17	3	1	—	1	2	—
17—16	5	—	3	2	1	—
16—15	8	5	2	7	2	5
15—14	4	5	15	7	4	5
14—13	4	9	14	11	12	1
13—12	6	6	2	6	1	12
12—11	3	4	—	4	—	6
11—10	1	4	2	1	8	4
10— 9	—	2	—	—	9	1
9— 8	1	—	—	1	2	3
8— 7	—	—	—	—	—	5
7— 6	—	1	—	—	—	—
Total	42	42	42	42	42	42

obtain three groups matched exactly for age, sex, and race, but differing as prescribed in I.Q. The tables and graphs which follow show the results of such comparison.

It has already been shown repeatedly that the stupid have a weaker grip than have unselected children. Also, it has been shown that pupils who do good work in school have a stronger grip than those who do poorly in school work. We find here that children who *test* in the highest one percent for intelligence have a stronger grip than do children selected as average intellectually; and a much stronger grip than stupid children have. These statements apply especially to grip in the right hand.

2. Deviation from Smedley's Norms

Furthermore, we have compared our group of the gifted with Smedley's norms, matching each child against Smedley's norm, for age and sex.

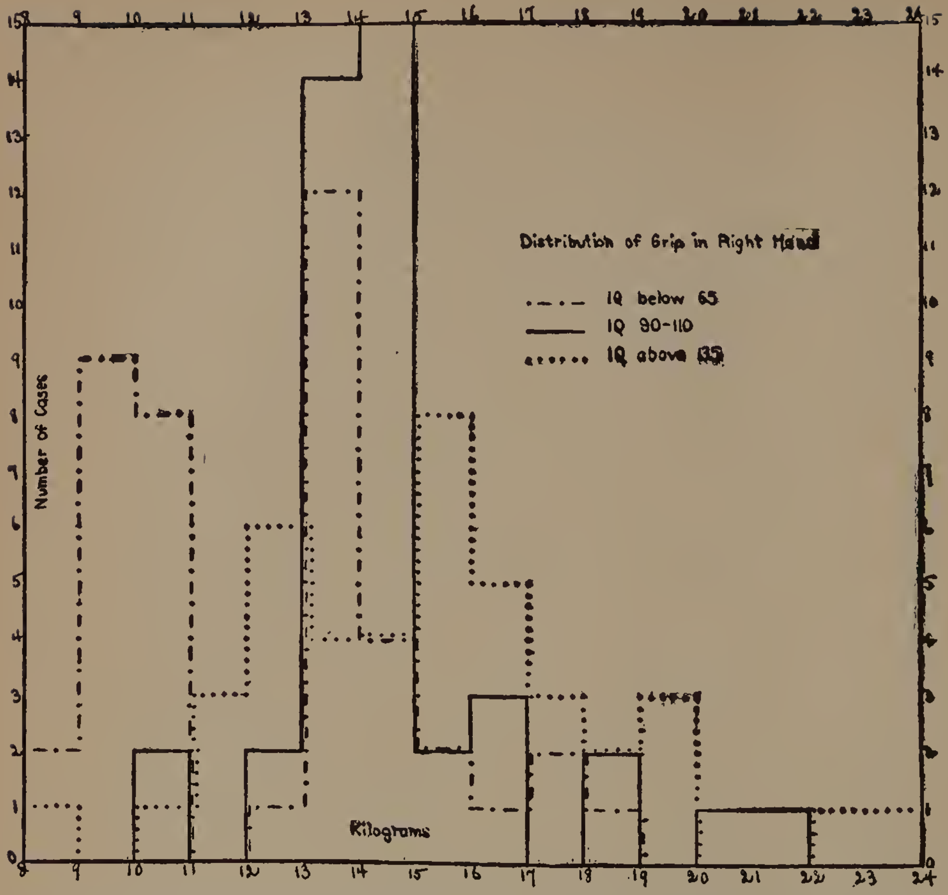

Fig. 7.—Showing Comparative Distribution of Right-Hand Grip in Kilograms, of Three Groups of Jewish Children, Selected Solely by Mental Tests, and Matched Group for Group, by Sex and Age

Table IX and Fig. 9 give the results of this comparison, showing again the stronger grip of the intellectually able children, as a group.

3. Ambidexterity and Left-Handedness

In order to observe the comparative number among the bright, who are left-handed, or ambidextrous, we computed the ratio of right to left $\left(\frac{\text{rt}}{\text{left}}\right)$ for each child, in groups A, B, and C, respectively.

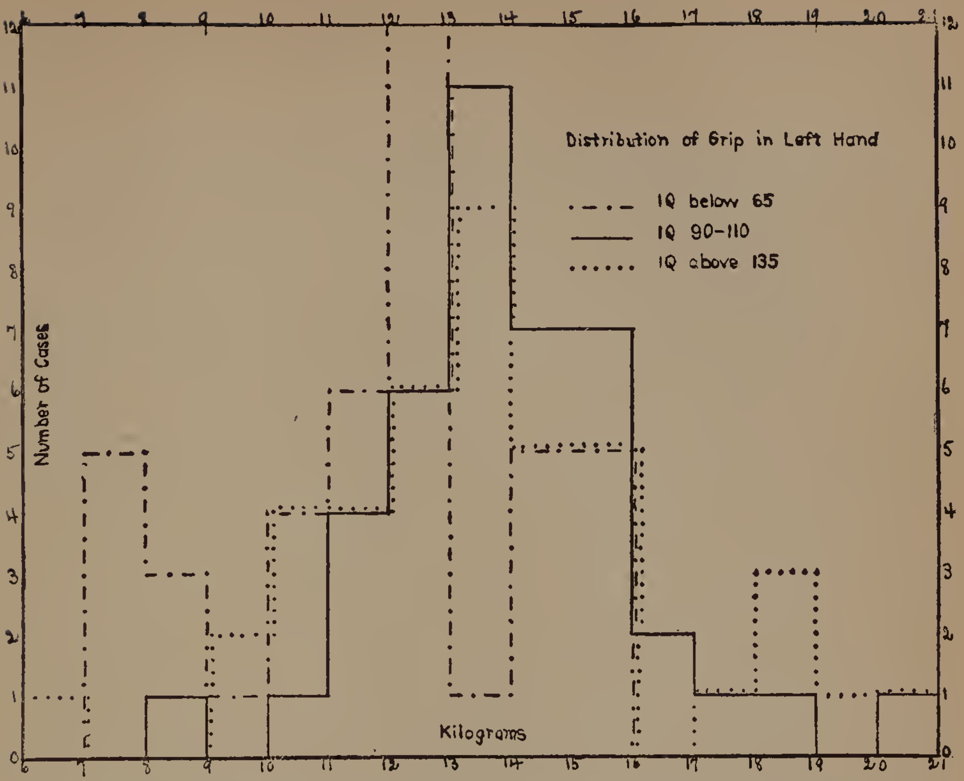

FIG. 8.—SHOWING COMPARATIVE DISTRIBUTION OF LEFT-HAND GRIP IN KILOGRAMS, OF THREE GROUPS OF JEWISH CHILDREN, SELECTED SOLELY BY MENTAL TESTS, AND MATCHED, GROUP FOR GROUP, BY SEX AND AGE

In Group A there appeared seven children with equal grip in both hands, and two with stronger grip in the left hand. In Group B there were four children with equal grip in both hands, and six with stronger grip in the left hand. In Group C the numbers were the same as in Group B.

Adequate criteria of handedness have not been agreed upon. Grip with the dynamometer as a criterion has been justly criticised by competent investigators. It is certain that additional tests of handedness must be applied in order to determine the percentage of ambidexterity and of left-handedness in our group.

III. CONCLUSIONS

1. Children testing in the highest one percent of human intellect are very superior in size, as a group.

2. However, intellect cannot be reliably inferred from physical size, nor physical size from intellect, in an individual chosen at random, as there is overlapping upon medians in size between groups of children chosen from opposite extremes for intellect.

3. Children testing in the highest one percent of human intellect have superior strength of grip, as a group.

TABLE IX.—DISTRIBUTION OF DEVIATIONS FROM SMEDLEY'S NORMS, FOR GRIP, OF CHILDREN TESTING ABOVE 135 I.Q. (STANFORD-BINET)

Amount of Deviation in Kilos.	Children above 135 I. Q. Frequency	
	R	L
+10.5– 9.5	1	–
9.5— 8.5	1	–
8.5— 7.5	–	–
7.5— 6.5	–	1
6.5— 5.5	–	–
5.5— 4.5	2	2
4.5— 3.5	2	2
3.5— 2.5	4	1
2.5— 1.5	5	6
1.5— 0.5	9	5
0.5—−0.5	5	8
−0.5— 1.5	6	6
1.5— 2.5	4	6
2.5— 3.5	–	2
3.5— 4.5	1	–
4.5— 5.5	2	2
5.5— 6.5	–	1
Total	42	42

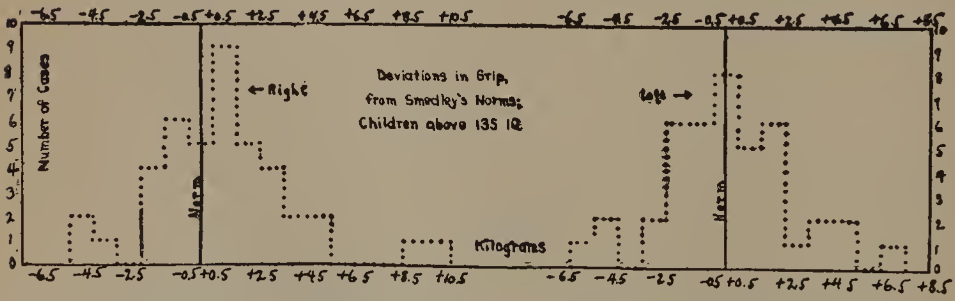

FIG. 9.—SHOWING DEVIATIONS FROM SMEDLEY'S NORMS, FOR GRIP IN KILOGRAMS, OF CHILDREN, TESTING ABOVE 135 I.Q. (STANFORD-BINET)

4. Intellect cannot, however, be reliably inferred from grip, nor grip from intellect, in an individual chosen at random, as there is overlapping upon medians in strength between groups of children chosen from opposite extremes for intellect.

5. That the demonstrated relationship between superiority of mind and superiority of body is causal, cannot be inferred. There is nothing in our data to suggest that the superior children are bright *because* they are tall and heavy; nor that they are tall and heavy *because* they are bright. We can only say that mentally gifted children, as a group, are large and strong at the ages studied, insofar as we have measured them.

Among the numerous comments which have been made upon the possible or probable correlation between mind and body, certain remarks by Francis Galton,[8] arising from his general observation of men, are interesting in connection with our findings: ''There is a prevalent belief that men of genius are unhealthy, puny beings —all brain and no muscle—weak-sighted, and generally of poor constitutions. [but in fact] A collection of living magnates in various branches of intellectual achievement is always a feast to my eye; being, as they are, such massive, vigorous, capable-looking animals.''

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[8] Galton, F. *Hereditary Genius.* Macmillan, London. 1914 ed.

B 2. THE HEALTH OF THE INTELLECTUALLY SUPERIOR PUPIL

K. J. Hoke
Dean of the College of William and Mary, Williamsburg, Virginia

The practice of accelerating pupils of more than average ability, through skipping, special classes, and individual instruction, has possibly gone far enough to consider it a more or less established policy in our public schools. The frequent criticism by parents and teachers of this fairly well established practice justifies closer study than has usually been given it. If the present study results in calling attention to the need for careful research in various fields connected with this practice, it will have served its purpose.

In the public schools of Richmond, Virginia, the policy has been practiced for some years of permitting pupils to advance from one grade to another whenever, in the opinion of the teacher and principal, they were prepared. In February, 1917, one special class for intellectually superior pupils was inaugurated. This number was later increased to four. In June, 1922, the last of these classes was temporarily discontinued. In these classes at this time were approximately 75 pupils whose records were sufficiently complete to serve as a basis for study. Since that time they have been in regular classes.

It is important to bear in mind that these pupils were selected for the special classes, in the main, on the basis of their previous record and the teacher's judgment.[1] The mental ages were obtained in about half of the cases by mental tests. The only physical examination was the routine examination of all pupils. The medical record cards of these 75 pupils at the time they were transferred to the special classes show no record of nervousness.

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[1] It seems proper to call attention to the fact that experience has amply demonstrated that the judgment of teachers is far less accurate than the evidence of intelligence and educational tests in selecting pupils for a segregated class of gifted pupils. In several school systems in which both methods have been tried the performance of pupils in such classes has very definitely improved when the change was made to selection on the basis of objective tests. It seems proper also to call attention to the fact that many of these pupils remained in the special accelerating classes for considerably longer periods than has been commonly recommended. The reader may compare in this connection the statistical results concerning nervousness and other non-intellectual traits reported elsewhere in this volume by Miss Davis and by Dr. Terman in Chs. VII and IX. Dean Hoke regards his conclusions as merely tentative on account of this rougher method of selection and the limited number examined.—Editor.

That the progress of these pupils represents a definite policy of the school system with reference to acceleration is shown from Table I, which shows their progress from the time they entered the first grade until they were transferred from the special classes to the regular classes.

This table is read as follows: Eight pupils who completed the VIIB grade made only normal progress from IA to IIB; in the IIIA and IIIB grades one term, or four and one-half months, in each was saved, etc.; seven pupils who completed the VIIA grade saved two terms in the IA, two and one-half terms in the IB, and one and one-half terms in the IIA, etc.

If a pupil progressed normally, spending one term in each grade, it would take him fourteen terms to pass through the seven grades. If he progressed more rapidly than normal time, he would complete the work of the seven grades in less than fourteen terms.

From Table I it will be seen that many pupils were accelerated from the time they entered the IA grade and, further, that the largest amount of acceleration began with the 3A grade, when some of them were placed in special classes. Eight hundred twenty terms would have been required if these seventy-five pupils had progressed normally to the point when they were excused from the special class. But the group spent only 662⅘ terms in accomplishing the required work. This saving amounted to 19.2 percent of normal time. It will also be noted that each pupil in the group saved, on the average, two and one-tenth terms.

The record in Table I gives the acceleration of the group during the time the pupils were in the regular classes as well as in the special class. The acceleration of the group during the time spent in the special classes is given in Table II. It is read as follows: Eight pupils entered the special class in the VB grade and remained through the VIIB grade. In the VB grade they spent the equivalent of four and one-half terms; in the VIA, four and one-half terms, etc.; nineteen pupils entered the special class in the

Table I. — The School Progress of Seventy-five White Pupils in Richmond, Virginia, From the Time They Entered the First Grade Until They Were Transferred from the Special Classes

Grade	No. of Pupils	NUMBER OF TERMS SPENT IN DIFFERENT GRADES														Total No. Terms		Average No. Terms Accelerated
		IA	IB	IIA	IIB	IIIA	IIIB	IVA	IVB	VA	VB	VIA	VIB	VIIA	VIIB	Actual	Normal	
VIIB	8	8	8	8	8	7.5	7.5	8	7	8	4.5	4.5	4	4	8	95	112	2.1
VIIA	7	5	4.5	5.5	5	5.5	6.5	6.5	6	6	6	7	3.5	3.5	.....	70.5	91	2.6
VIB	15	14.5	10.5	11.5	13	13.5	14.5	12.8	7.8	7.8	10.5	13	15	.....	.....	145.5	180	2.3
VIA	13	13	13	13	12.5	12	12.5	8.5	8.5	12.5	6.5	7	.....	.....	.....	119	143	1.8
VB	16	15.5	15.5	16	16	15.3	10.8	9.3	11.3	7.8	7.8	.....	.....	.....	.....	125.5	160	2.0
VA	8	8	8	8	8	7	4	3.3	5.5	5.1	.....	.....	.....	.....	.....	56.8	72	1.9
IVB	6	6	6	6	7	3.5	3	3	4	.....	.....	.....	.....	.....	.....	38.5	48	1.6
IVA	2	2	2	2	2	1.5	1	1.5	.....	.....	.....	.....	.....	.....	.....	12	14	1.0
Actual	75	72	68	70	71.5	65.8	59.8	53.3	50.1	47.3	35.3	31.5	22.5	7.5	8	662.8	....	2.1
Normal	75	75	75	75	75	75	75	75	73	67	59	43	30	15	8	....	820	....
Percent Normal Time Saved	......	4.0	9.3	6.6	5.3	12.2	20.2	28.8	31.2	29.3	40.1	26.7	25	50	0	Total Percent of Normal 19.2		

TABLE II.—THE SCHOOL PROGRESS OF SEVENTY-FIVE WHITE PUPILS IN RICHMOND, VIRGINIA, DURING THE TIME THEY WERE IN SPECIAL CLASSES

Grade	No. Pupils	NUMBER OF TERMS SPENT IN DIFFERENT GRADES										Total Number Terms		Average Number Terms Accelerated
		IIIA	IIIB	IVA	IVB	VA	VB	VIA	VIB	VIIA	VIIB	Actual	Normal	
VIIB	8						4.5	4.5	4	4	8	25	40	1.8
VIIA	19	15.5	18	15.3	12.8	11.8	15	19	14.5	3.5		125.5	171	2.4
VIB	4				2	2	2	2	4			12	20	2.
VIA	23		19	15	18.5	19	10	6				87.5	138	1.7
VB	0											0	0	0
VA	7		5	3	3	3.5	3.5					18	35	2.4
IVB	5	4.8	2.8	2.8	3.8	1.8	.3					16	36	3.25
IVA	6	4.5	4	4.3	2.6	.6						16.1	40	2.7
Actual	75	34.8	48.8	40.5	42.8	38.8	35.3	31.5	22.5	7.5	8	300.6	...	2.4
Normal	75	33	63	63	67	67	67	54	31	27	8	....	480	....
Percent Normal Time Saved	..	24.	22.	35.	36.	42.	47.	41.	27.	72.	....	Total Percent of Normal 37.4		

IIIA grade and remained through the VIIA grade. In the IIIA grade they spent the equivalent of fifteen and one-half terms; in the IIIB grade, eighteen terms, etc.

In order to determine the presence of nervousness in these seventy-five pupils at the present time, they were given a thorough examination by Dr. N. Thomas Ennett, Chief of the Medical Department. The results of this examination are as follows:

Total number examined	72
Total number not examined (absent)	3
Total number found nervous	28 (38.9%)
Total number found not nervous	44 (61.1%)

Although the routine physical examination of these pupils at the time they entered the special classes did not show any nervousness, it is quite possible that, if an exhaustive physical examination had been given this special group at that time, some nervousness would have been detected. According to the report of the Chief of the Medical Department, who made the last examination, approximately five of the twenty-eight nervous cases, or seven percent of the total number examined, would have been detected by the routine examination, if it alone had been made at this time. This would leave twenty-three of the nervous cases, or thirty-one percent of the total, undetected by the routine examination. It should be stated further, that the routine examination is intended primarily to detect infectious diseases and such pronounced physical defects as adenoids, enlarged tonsils, and defective eyesight.

It would seem, therefore, that the amount of nervousness in this group exceeds that of the regular school population, though the lack of data[2] makes impossible a careful comparison of the amount of nervousness in the two groups.

A survey of the literature dealing with this problem furnishes little information with which to make comparisons. A report from Dr. Clinton P. McCord, Health Director of Public Schools, Albany, New York, shows that the average general nervousness in first- and sixth-grade pupils, in regular classes for six consecutive yearly examinations, was thirteen percent. In a recent communication

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[2] Time and facilities were not available to make the exhaustive examinations of large numbers of pupils in regular classes in order to determine the amount of nervousness among pupils in general.

Dr. McCord writes as follows concerning the need for more careful examination of those pupils under consideration for acceleration in some form or another:

> "I am quite certain that a school system, placing certain children in special classes for so-called accelerated pupils and selecting these pupils on the basis of their intelligence quotient and their scholastic standing only, is doing grave injury to a very large percentage of the group. The only rational way to select such pupils is upon the basis of complete physical, neurological, psychological and psychiatric study, including personality study; this study should include the determinations of special abilities and disabilities as far as our psychiatric equipment permits."

In order to secure the judgment of the teachers who are now teaching this group of pupils, the following questionnaire was sent. Replies were secured concerning seventy-one of the seventy-five pupils. The questions and a summary of the results are shown here.

	Yes Percent	No Percent	No Information Percent	Reply Conditioned Percent
I. Have you observed any symptoms of nervousness? (Extreme 2 pupils; slight 17 pupils)	26.7	73.3	0.0	0.0
II. Has pupil, so far as you know, lost time from school on account of sickness? If so, how many days? (Average per pupil, 6 days since entering special classes)	22.5	57.8	19.7	0.0
III. Has any sickness been due to overwork or other condition in school?	1.4	66.1	32.4	0.0
IV. Is the pupil as mature mentally as the other pupils in his class?	78.8	16.8	0.0	4.4
V. Does the physical development of the pupil interfere with wholesome competition among members of the same class?	1.4	63.4	35.2	0.0
VI. So far as you know, has the pupil failed in any of his work since leaving the accelerated class as a result of the policy of acceleration?	29.5	59.1	11.4	0.0
VII. In so far as you have observed, is the pupil deficient in his training?	28.1	67.6	4.3	0.0
From skipping parts of curriculum . . . 9 pupils				
From lack of application . . . 2 pupils				
From slowness . . . 2 pupils				
VIII. In your judgment has this pupil been benefited by acceleration?	38.	32.5	0.0	26.8

	No.	Percent
IX. How does the pupil rank in scholarship among the pupils of his class:		
First or highest quarter	19	26.7
Second quarter	27	38
Third quarter	15	21.1
Fourth or lowest quarter	6	8.4
No information	4	5.8
X. In your judgment which is the better plan for the care of the more capable pupil:		
a. The accomplishment of the same amount of work in each grade, but in less time than the average pupil and, therefore, more rapid progress grade by grade	29	40.8
b. The same amount of time in each grade as the average pupil, but more work and additional subject matter to be covered	35	49.2
Undecided	7	10.

An analysis of these replies shows the following facts:

1. In the judgment of the teachers 26.7 percent of the pupils show some symptoms of nervousness. Of this number two pupils were rated as "extremely nervous" and seventeen as "slightly nervous."

2. Absence from school on account of sickness or over-work could not be given as a cause for any failures in this group after leaving the special classes.

3. Sixteen and eight-tenths percent of the pupils are rated more immature than the other pupils in their group.

4. The physical development of these pupils does not interfere with wholesome competition among members of the same group.

5. Twenty-nine and five-tenths percent of the group have had failures which are attributed by the teachers to the policy of acceleration.

6. The fact that 21.1 percent and 8.4 percent of the group are rated in the third and fourth quarters, respectively, would indicate wide disagreement among the teachers concerning the ability of these pupils.

7. In the judgment of the teachers a fairly large percentage, 28.1 percent, of the pupils are deficient, owing to previous training.

8. Opinion is practically equally divided between the two plans of treatment, acceleration or enrichment.

An analysis of the suggestions made by the teachers reporting on these pupils shows a distinct divergence of opinion between the teachers of the elementary schools, with whom the pupils have been accelerated, and the teachers in the junior and senior high schools, who have received these pupils after leaving the special classes. The results of the questionnaire also show clearly considerable disagreement among the teachers concerning the policy of acceleration.

The task of securing reliable data dealing with the problems raised in this study calls for the assistance and co-operation of many workers. Without the support of Mr. A. H. Hill, Superintendent of Schools, and Dr. N. Thomas Ennett, Chief of the Medical Department of the Richmond Public Schools, this study would have been impossible. I am grateful to them for their assistance.

The limited data do not warrant any definite and final conclusions concerning the extent to which special classes for acceleration cause children to become nervous. At best, the data constitute only a preliminary report. Its chief purpose is to indicate, if possible, the necessity for careful inquiry along certain lines which should result in making a more stable and efficient policy dealing with acceleration.

It is possibly not unfair to say, however, that the information submitted points to the following conclusions:

CONCLUSIONS

1. The amount of nervousness in this group after they had passed through the accelerated classes is apparently high.

2. This physical condition argues strongly for a thorough physical examination of all pupils when they enter the special classes and at regular intervals thereafter.

3. The limited amount of information dealing with the physical condition of children who are in accelerated, and also in regular, classes calls for exhaustive studies as a basis for more intelligent procedure.

4. The indefiniteness of information relative to the progress of pupils throughout the public schools after they have left the special classes makes reliable conclusions covering the policy of

acceleration impossible. In order to determine the effectiveness of our present policy of acceleration it will be necessary to know the scholarship standing, the rate of progress, and the physical conditions of such pupils until they complete the high school and possibly in some cases after they have entered institutions of higher learning.

5. The wide divergence of opinion among teachers and parents calls for more accurate information concerning the success of the policy of acceleration before this policy can receive the wholehearted support of parents and the teaching profession.

C. THE ATTAINMENTS OF GIFTED CHILDREN

C1. THE ATTAINMENTS OF GIFTED CHILDREN UNDER INDIVIDUAL INSTRUCTION

CARLETON W. WASHBURNE
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A system of individual instruction and promotions in the Winnetka public schools during the past four years has made it possible for us to watch the natural rate of progress of gifted children by subjects and by grades. It has made clear the fact that gifted children, as a whole, cover a given unit of school work in less time than average children. It has shown, also, that gifted children differ widely among themselves, both in general rate of progress and in the subjects in which their progress is greatest.

To understand our findings, it will be necessary first to understand the general principles of the Winnetka technique of individual instruction and subject promotions.

The curriculum is divided into two types of work: one type we call the common essentials; the other type, socialized and self-expressive activities.

Common essentials are defined as those knowledges and skills which are used by practically everyone who possesses them. They are, therefore, objectively determinable by statistical investigation of social needs and usages. By definition, they are practically universal. Consequently, every child should be trained in them. They include: (1) a certain amount of speed and accuracy in the fundamental processes of arithmetic; (2) the ability to read with a given amount of speed and comprehension; (3) the ability to write legibly and rapidly; (4) habitual use of the most common elements of punctuation and capitalization; (5) ability to spell the most commonly used words; and (6) knowledge of those facts in history and geography to which frequent allusion is made.

Socialized and self-expressive activities, on the other hand, have as their objective skills and habits which are as yet unmeasurable. Through them we strive to give children: (1) training in co-operation; (2) training in consistent work toward a desired end;

(3) the habit of initiative in creative endeavor; and (4) the sense of the interdependence of man upon man.

While there are distinct differences between the common essentials and the socialized and self-expressive activities, they naturally are not kept in water-tight compartments. The common essentials are always being applied in socialized activities, which in turn have a reciprocal effect upon them. It is, however, the common essentials which we individualize in the Winnetka schools. It is the common essentials which can be measured accurately, and which must be mastered by each student of anything like normal mentality, regardless of the degree of his intellectual endowment.

Through these common essentials each child moves at his own natural pace. The children have before them at all times a list of the exact objectives to be reached—what standards of speed and accuracy, what factual knowledge, and what skill in each subject. No child moves from one topic to the next in any of the common essentials until he has mastered the topic on which he is working. The slow child takes as long as he needs. The quick child goes forward as rapidly as he is able. This is made possible through self-instructive devices and self-corrective practice materials. The progress of the children is tested by carefully prepared diagnostic tests, each one covering completely the knowledge or skills which it is supposed to test.

When a child has worked through a certain amount of practice material and given himself a practice test, he asks the teacher for a real test. The real test is corrected by the teacher, who either 'O.K.'s' the child on that unit of work or refers him back for specific practice on the points he has missed.

This system obviates the necessity for recitations, in the usual sense of the word. Children are tested individually by the diagnostic tests and need not be tested through the class recitation. This leaves from one-third to one-half of their school day clear for the socialized and self-expressive activities.

Self-expressive activities include much of the art work, all of the shop work, some of the music, and all except the formal side of written composition. Since we are striving in our self-expressive activities to bring out children's individual and special abilities, there is no attempt to grade them by a common standard. A thing is made for the sake of making it, not for the sake of a mark or promotion.

The same is true of our socialized activities. When we have, as we frequently do, a vigorous class discussion of any problem, whether in arithmetic or social studies or school government, that discussion is for the sake of solving the problem and is not a means of discovering whether the child has studied his lesson. When a child makes a report on an investigation, or on a book, it is with the purpose of giving the rest of the class the information which they do not already possess, not for the purpose of showing the teacher that this information has been gained. Socialized activities include also field trips and group projects. These group projects are an end in themselves, not a means to the learning of facts or skills which can be better taught through individual practice on specific needs.

Self-expressive and socialized activities have nothing to do with promotion or advancement. This is determined solely by the individual work.

When children under this system have completed all or most of their sixth-grade work, they enter the junior high school (7th and 8th grades only). Here individual instruction continues and a wide variety of electives and special courses is offered. The children remain until in both preparation and general maturity they are considered by the faculty as ready for the senior high school. All surplus time can be readily and profitably filled with work in the shops, the laboratory, the art and pottery rooms, or the special subject classes.

It is under such a system of individual and group work that we have been able to watch the progress of the gifted children in the Winnetka schools.

We are this year making, under a subvention from the Commonwealth Fund in New York and with the assistance of Dean W. S. Gray of the University of Chicago, a thorough statistical study of the effects of individual instruction as carried on in Winnetka. Some of the results of this investigation are now available.

We have given all the children from the fourth grade through the seventh the National Intelligence Tests. On this basis, we have figured their intelligence quotients. We recognize, of course, that these intelligence quotients, as applied to any individual, are of less value than those obtained by individual examination. On the other hand, in selecting the brightest group of children as a whole, the results are reasonably accurate. The highest fourth of intelligence quotients ranges in the Winnetka schools from 123 to 166. This range includes 192 children for whom our records are complete in all subjects for at least two years of individual instruction. For the purpose of the present study, *a gifted child is defined as a child falling within the top one-fourth of intelligence quotients* as measured by the National Intelligence Test.

The following additional definitions and assumptions must also be borne in mind in interpreting the results of the present study:

1. *Grade* is defined as the average grade[1] in the following subjects, as of September 15th, 1923: arithmetic, language, history-geography, reading, and spelling-writing. It is necessary to take an average of subject grades since a child may be in a different grade in each subject.

2. *Subject grades* are determined by the date of promotion to a certain subject plus one-tenth of a grade for each school month of attendance since that promotion. For example, a child promoted to Grade 5 in reading on March 1st, who, on September 15th, 1923, had been in school four months since that promotion, is counted as in Grade 5.4 in reading. This involves the assumption that it will take him ten school months to complete the reading. It will usually, as our records show, involve considerably less than this. Most children are, therefore, somewhat more advanced than this report indicates. In the occasional case of a child who was promoted to a certain grade in some subject more than ten school months before September 15th and who has not yet reached the standard of the next grade higher in that subject, the child is assumed to have completed nine-tenths of that grade's work. For example, if the child referred to above as having been promoted to Grade 5 arithmetic on March 1st, 1923, had

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[1] Grade means the school grade a child is in, not the marks he receives. We give no marks since every child works until he reaches standard.

instead been promoted to Grade 5 arithmetic on March 1st, 1922, and was still in 5th-grade arithmetic in September, 1923, he would be considered as in Grade 5.9 in arithmetic.

3. The *normal length of time* for completing a grade's work in any subject has been assumed to be 37 weeks, exclusive of holidays. During any school year absences which total two weeks or less are ignored. Thus, a pupil who completes a grade's work in 35 weeks of actual attendance is not considered two weeks in advance, but is counted as having done the grade's work in the normal length of time.

4. *Progress* has been computed only for those children from Grades 4 to 7 who have been in the Winnetka schools for at least two years. It has been computed to cover a period of time not in excess of four years, since the first crude beginnings of individual instruction in Winnetka were in September, 1919. The method of computing progress has been this: The grade of the child at the time his progress under individual instruction was begun has been noted. The number of weeks of actual attendance in school from that date to September, 1923, has been calculated. From this, the grade in which he would normally be on September 15th has been found. His actual average grade is then compared with the average grade he should be in according to the number of weeks he has attended school. For each one-tenth of a grade beyond his normal grade, he is credited with a month of acceleration. All progress has been reduced to the *average per two years of individual instruction.*

5. *Middle group* and *low group* are defined as follows: The middle group consists of that half of the children studied whose intelligence quotients range from the lower quartile to the upper quartile. The low group is that fourth of the children with the lowest intelligence quotients. In other words, we have divided the Winnetka children for the purpose of this study into three main groups according to their intelligence quotients—the top one-fourth of these children is counted as the gifted group, the middle half as the middle group, and the bottom one-fourth as the low group. The range of intelligence quotients and the number of children included in each of these three groups are as follows:

Gifted group—92 children—I.Q. 123-166.
Middle group—188 children—I.Q. 100-122.
Low group—93 children—I.Q. 60-100.[1]

Within these limitations and definitions we have completed one statistical study of grade progress which enables us to compare the gifted children with the middle and low group and to see the range of grade-progress among the gifted children.

We have made a small subsidiary study showing the average grade-progress of those children whose I.Q. happened to fall at

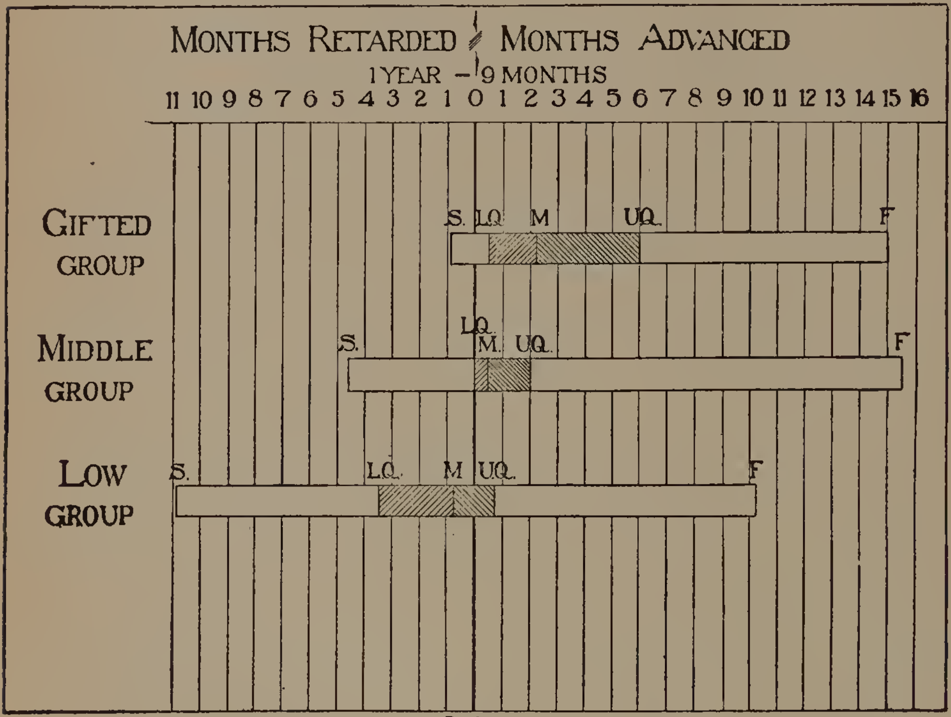

Fig. 1

FIG. 1. This shows the progress spread of the gifted group compared with that of the middle and low groups. Read the chart as follows: Of the gifted group the fastest child (F) was advanced 1 year 6 months (15 months) beyond normal at the end of 2 years. The upper quartile child (U.Q.) was advanced 6 months. The median child (M) was advanced 2 months (9 weeks). The lower quartile child (L.Q) was advanced 2 weeks (2 weeks advancement has been considered normal progress in this study). The slowest child of the gifted group was retarded 3½ weeks (1 month).

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[1] The reason the top quarter is not an exact one-fourth of the total is that eliminations for incomplete records or late entrance in school were made after the children were divided into four equal parts.

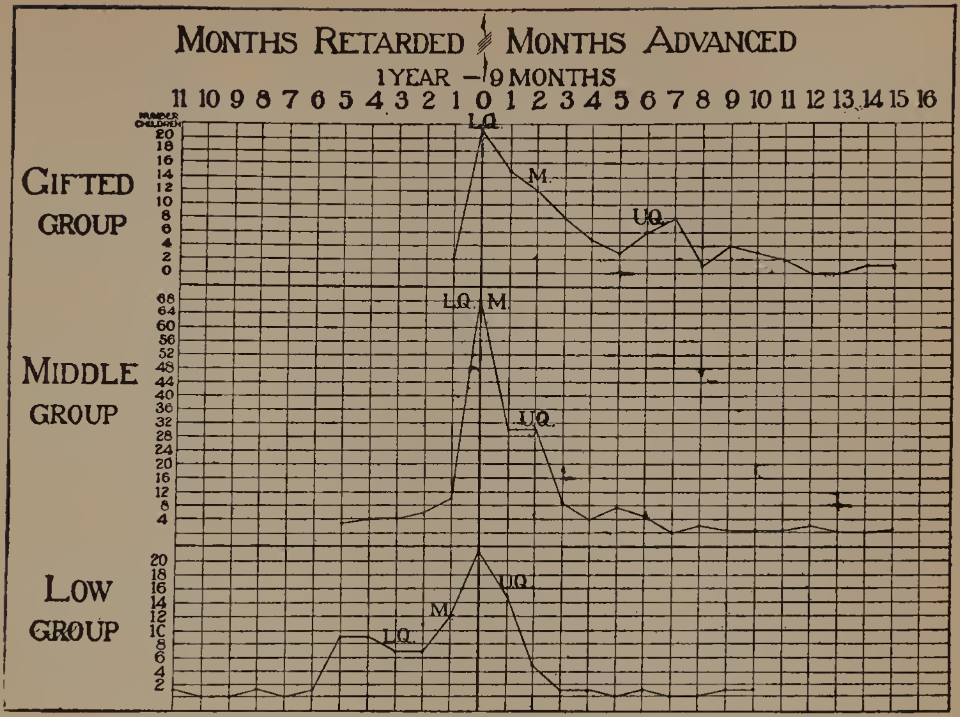

Fig. 2

FIG. 2. This gives the distribution curves of the same groups as are shown in Fig. 1. The vertical scale for the middle group is just half that for the gifted and low groups, since the middle contains twice as many children as either of the others. Read the chart as follows: The most rapid progress of the gifted group was made by one child who was 1 year 6 months (15 months) advanced at the end of 2 years of individual work. One child was 1 year 5 months (14 months) advanced; no children were 12 or 13 months advanced; 2 children were 1 year 2 months (11 months) advanced; 3 children were 1 year 1 month (10 months) advanced and 4 children were 1 year (9 months) advanced. The fact that the mode falls at normal in all three groups is due to the tendency of children, teachers and parents to think in terms of a grade a year and to make special effort to have a grade's work completed in each subject as the school year draws to a close.

the median for all children and at the upper and lower quartiles. We are launched on a study of the range of progress by subjects among gifted children and among those of the middle and low groups.

The first of these three studies is shown by Figs. 1 and 2. In Fig. 1 the top bar represents the range of progress of the gifted group, the middle bar the range of progress of the middle group, and the lower bar the range of progress of the low group. Reference to this figure will show that the progress of gifted children has ranged from a lower extreme consisting of a child who is actually a month retarded to an upper extreme represented by a child who is fifteen months, or a year and two-thirds advanced (a year equals nine months).

The lower quartile of the gifted group is advanced only two weeks, the median a little over two months, and the upper quartile six months.

It will pay to analyze the two extreme cases for a moment. Is the child who is retarded a case of mis-classification owing to group testing? Is the child who is the most advanced also the one with the highest I.Q.? Both these questions must be answered in the negative. The former has been tested individually by the Stanford-Binet test. This child, who is a month retarded, has an I.Q. by the National Intelligence Test of 144, by the Stanford-Binet of 150. He is a boy in about the sixth grade who has been under individual instruction for three years. The child at the upper extreme has an intelligence quotient by the National Intelligence Test of 133. The child with the highest intelligence quotient had an I.Q. of 166. Consequently, the child who made the best record is not the child with the highest score.

This same lack of close correlation between intelligence quotient and rate of progress comes out again when one studies the intelligence quotients of the children who fall at the upper and lower quartiles and median point of advancement of this gifted group. The child whose advancement is represented by the lower quartile had an I.Q. by the National Intelligence Test of 153, by the Stanford Binet of 142. The child of median advancement had a National Intelligence I.Q. of 136 and a Stanford Binet of 117, while the child whose rate of progress placed her exactly at the upper quartile had a National Intelligence I.Q. of 128 and a Stanford Binet I.Q. of 124. The progress for these three individuals is actually in inverse proportion to their intelligence quotients on the National Test.

Taking the gifted group as a whole and calculating the coefficient of correlation between I.Q., as measured on the National Intelligence Test and average rate of advancement through the grades, we find that $r = .068$, which is no correlation at all[2]

Nevertheless, while there is such wide variation among individuals in the gifted group, the gifted group, as a whole, is distinctly advanced over the middle and low groups. The lower quartile of the gifted group is advanced as much as the median of the middle group and as the upper quartile of the low group. The median of the gifted group is advanced a trifle more than the upper quartile of the middle group. So far as central tendencies are concerned, therefore, there is no doubt but that there is a direct relation between intelligence quotients and rate of advancement through school subjects. Taking the correlation between the intelligence quotient and rate of advancement for all the children studied—gifted, middle, and low groups combined—we find that $r = .587$. The error comes when one tries to apply what is true of central tendencies of large groups to all the various individuals who make up these groups.

A minor and subsidiary study that bears out this same point has been made as follows. Those children (5 of them) whose I.Q. happened to be exactly the upper quartile I.Q. of all the children studied (122) were compared with the group of 9 children whose I.Q. happened to be exactly the median for all children studied (109) and with those individuals whose I.Q. happened to be exactly 100, which is the lower quartile for all children studied. In each case, the average grade progress of all the individuals having the same I.Q. was computed. The group with an I.Q. of 122 had made just normal progress. The group with an I.Q. of 109 had made an average progress *over four months in advance* of normal, whereas the group with an I.Q. of exactly 100 had averaged exactly normal progress.

This shows again the futility of attempting to group children by intelligence quotients and then treating each group as if it were homogeneous. This point is more strikingly brought out in our third study which is under way.

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[2] Correlation coefficients have also been worked out between I.Q. and advancement for both middle and low groups. For the middle group $r = .08$, while for the low group $r = .407$.

Lacking, at the time that this is written, complete data, the conclusions of the third study will have to be drawn from sample cases. The purpose of this study is to discover whether gifted children are all quick in the same subjects or whether the rate of advancement in different subjects varies among individuals. Let us consider the following seven sample cases (see Fig. 3):

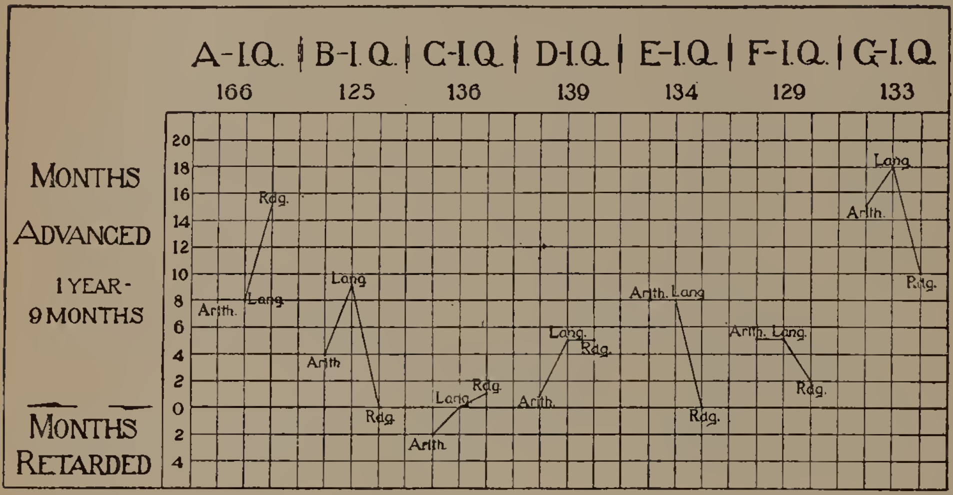

FIG. 3. Here are seven gifted children, or their advancement profiles. Do they look alike? Would they form a homogeneous group? The numbers on the left show the number of months advanced or retarded in 2 years from the normal rate of a grade a year. The profile shows for each child how far advanced or retarded he is in three typical subjects: arithmetic, language, and reading. Read the chart as follows: Child A, whose I.Q. (National) is 166, is advanced 8 months in arithmetic, 8 months in language and 1 year 6 months (15 months) in reading.

Child A has an I.Q. of 166. His reading is advanced one year and six months, his language is advanced eight months, and his arithmetic eight months.

Child B with an I.Q. of 125, is just normal in reading, four months advanced in arithmetic and nine months advanced in language.

Child C, with an I.Q. of 136, is just normal in language, one month ahead in reading, and two months behind in arithmetic.

Child D, with an I.Q. of 139, is one month advanced in arithmetic and five months ahead in language and reading.

Child E, with an I.Q. of 134, is normal in reading, but eight months ahead in both arithmetic and language.

Child F, with an I.Q. of 129, is two months ahead in reading and five months ahead in arithmetic and language.

Child G, with an I.Q. of 133, is one year and one month advanced in reading, one year and six months ahead in arithmetic, two years and two months ahead in language.

Under a system of ''homogeneous grouping,'' these seven gifted children would all be given the same quantity and type of work. Child A, who is one year and six months ahead in reading, would be given the same assignments as B and E, who are just normal in reading. Child G, who is one year and six months advanced in arithmetic, would be given the same arithmetic assignments as D, who is one month advanced in this subject, and as C, who is two months behind. It is true that these discrepancies would not appear on the surface under an ability grouping scheme. The teacher, in his effort to hold the children together, would not realize that he was trying to make the child with barely normal ability in some subject do work which was designed for children gifted in this field. The lack of homogeneity among gifted children, is shown for three subjects in Figure 4.

These facts would indicate that if one is to carry on group instruction, making ability groups for gifted children, those ability groups would have to differ with each subject. They would have to include some children whose I.Q.'s would not indicate that they are gifted and exclude some children whose I.Q.'s *would* indicate that they are gifted. The complexity of so many varying types of grouping makes one turn naturally to differentiated individual assignments or to the simple expedient of permitting each child to progress at his own rate in each subject.

In this same connection, let us revert for a moment to the first study. There are many children in the middle group, who, under a classification scheme, would be held to average progress, but who are perfectly capable of doing work that excels that of the lower half of the gifted children. Look back at Fig. 1. Here it will be seen that the 46 individuals of the gifted group who have made less than the median progress are advanced only two months or less.

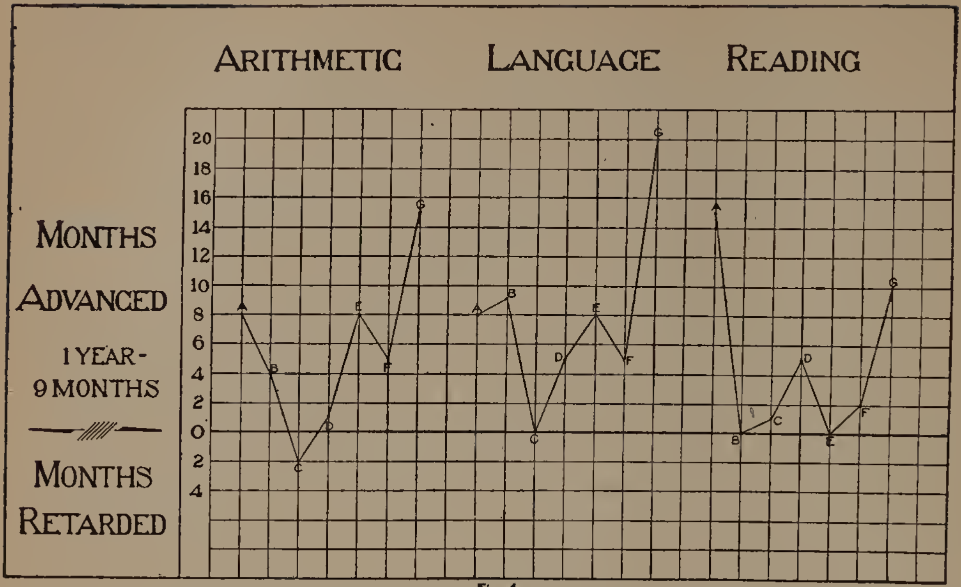

Fig. 4

FIG. 4. Here are three profiles of nice homogeneous groups of seven gifted children—just see how homogeneous they are! Read them like this: The arithmetic group has Child A (I.Q. 166) whose arithmetical ability is represented by the fact that in two years he has advanced 8 months beyond normal, Child B (I.Q. 125) 4 months advanced, Child C (I.Q. 136) 2 months retarded, Child D (I.Q. 139) 1 month advanced, Child E (I.Q. 134) 8 months advanced, Child F (I.Q. 129) 5 months advanced and Child G (I.Q. 133) 1 year 6 months (15 months) advanced.

In contrast with this, the 47 individuals who make up the top fourth of the middle group are advanced from two months to a year and six months. Therefore, under a plan of classification which grouped children by intelligence quotients, nearly half of the children in the gifted group would be misplaced, while an equal number in the middle group would be misplaced.

All of these considerations bring out forcibly the necessity of treating gifted children as individuals instead of treating them as members of a supposedly homogeneous group. Two plans of making adaptation to these individual differences have been tried.

One is the plan described in the first part of this article as the Winnetka technique; it is based upon Frederic Burk's technique in the San Francisco State Teacher's College, and is closely analogous to the work of Sutherland in Los Angeles and of Jessie Mackinder in London. Under this plan, adaptation to individual differences is made by allowing individuals to progress through the various subjects at their own natural rates.

The other plan is that of providing varying amounts of work for different individuals while keeping their progress through the grades uniform. The advantage of this is that presentation of new subject matter and especially class discussions can be carried on more readily than where all the children in the class are at different points in their work. There are, however, certain practical obstacles in the way of it in lower grade schools—obstacles that, unfortunately, are often glossed over so that the teacher thinks she is adapting the work to individuals when she is really only keeping them occupied.

One of these obstacles is the natural tendency of human beings to conserve effort. When a child sees that his progress is identical whether he makes an effort or not, he is liable to 'lie down on the job.' When, therefore, a child with considerable ability finds that the only reward for finishing a certain unit of work ahead of time is that he is given more work, some of the children resort to the very human expedient of not finishing their minimal work ahead of time. This is not, however, the most serious obstacle.

The fact that lower grades are usually taught by one teacher and have access for the most part to but one classroom makes it quite impossible to provide various types of special instruction and activities that would fit the particular needs and abilities of each individual child. Consequently, instead of using the surplus time of the child to develop his particular interest or ability, one uses it by giving additional academic work of the kind usually carried on in the classroom. This frequently means adding to the elementary curriculum for the gifted child material of very doubtful value, on a pretext of enriching his curriculum. The 'enrichment' is in reality mere 'padding.' For example, certain schools attempting this sort of differentiation assign to the average child seven arithmetic problems, to the gifted child ten. As a matter of fact, if the child is really gifted in arithmetic, he probably needs *fewer* problems than the average child in order to give him a grasp of the principle; he certainly does not need more. His time is occupied, it is true, and the teacher is thereby led to believe that successful adaptation has been made to this gifted child.

The chief objection which has been raised to the other alternative—that of permitting children to forge ahead at their own natural rates—has been that it will result in their getting the minimal amount of information and skill and reaching the secondary schools at too young an age.

In Winnetka, we have attempted to solve this problem by letting gifted children move forward each at his own natural rate until they reach the seventh and eighth grades, which are centralized in the junior-high-school building. The junior high school, with its laboratory, shops, and special rooms, provides the organization which is necessary for a satisfactory adaptation of the school to the widely varying needs of gifted children. It is for this reason that in Winnetka we prefer to take full advantage of the rapid progress of gifted children through at least the first six grades. Thereafter, we can handle each case individually, working out with the child the program which seems best fitted to him, and deciding in his particular case whether he should go to the high school at an age one or two years younger than that of most children or should have an unusually large amount of special or advanced work.

In this connection, see the case study of an unusually gifted child in the Winnetka schools, described in detail in Chapter XI of this *Yearbook*.

CONCLUSIONS

1. Gifted children allowed to move through school at their own natural rate make, as a whole, distinctly better progress than children of lower intelligence quotients.
2. There is a wide range in the rate of progress of gifted children—so wide that the lower half of them actually progress less rapidly than an equal number of children from the top of the middle group.
3. Gifted children not only differ in average rate of progress, but in the subjects in which they excel.
4. Consequently, any attempt to treat gifted children as a homogeneous group will defeat its own purpose, which is the adaptation of the school work to gifted children.

5. Any attempt to group children by intelligence quotients will result in the misplacement of nearly half of the gifted group and of an equal number of the middle group.

6. Real adaptation of the schools to the gifted children must come through some form of individual instruction which will recognize the wide variety of abilities among gifted children, both as to general rate of progress and as to subjects in which superior progress can be made. This individual work might take the form of differentiated assignments, or the form of permitting children to progress at varying rates through each subject, or a combination of the two such as exists in Winnetka. In either case, the gifted children should not be treated *en masse,* but as the widely differing individuals which this study shows them to be.

C 2. SOME ATTAINMENTS OF GIFTED CHILDREN IN SEGREGATED CLASSES AT LOUISVILLE

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For the past seven years the Louisville public school system has maintained one or more special classes for gifted children. Information relative to the earlier classes has been published elsewhere.[1] It is the purpose of this article to present data relative to the selection and progress of the most recent of these classes,[2] as indicated by standard tests.

I. Organization of the Class

The method of selection of the class was as follows. The principals and teachers of the city schools recommended to the Bureau of Educational Measurements pupils who, in their judgment, were mentally and physically able to do in one year more work than is ordinarily accomplished in a regular grade. School marks, health, and the teachers' judgments as to the child's real ability were the chief factors in determining such recommendations. Each pupil thus recommended was given a Stanford-Binet test by a member of the Bureau of Educational Measurements, who considered the physical development as well as the intelligence of the candidates before endorsing the recommendations.

Group II, consisting originally of twenty-two pupils, ten boys and twelve girls, was selected and organized in September, 1921. Three boys were added later in the year. This group was drawn chiefly from 4B, with a few pupils from 3A, and a few from 4A. The range of chronological ages was from 94 months to 122 months, of mental ages from 132 months to 184 months, and of intelligence quotients from 130 to 185. At the time of admission the median chronological age was 110 months, with 60 percent between 104 and 114 months. The median mental age was 157 months, with 50 percent between 142 months and 168 months. The median intelligence quotient was 142, with 64 percent between 139 and 149.

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[1] Race, Henrietta V., "A Study of a Class of Children of Superior Intelligence," *Jour. of Educ. Psych.*, February, 1918; see also *Improvability*, Teachers College Contribution to Education, No. 124: 1922.

[2] This class is designated in the report as Group II. Similar data concerning another class organized in 1920 (Group I) have been gathered but they are not included for lack of space and because they are essentially like those reported here.—*F.N.F.*

From September, 1921, to February, 1923, these pupils were taught by Miss Fanny Sleadd, who had taught similar classes for several years. The methods used were largely those which tended to produce acceleration, enrichment being more or less incidental. In February, 1923, the class was admitted to a special departmental school. At this time this Group II was considered parallel to Grade 6A. Since its admission to the special departmental school, an effort has been made not to accelerate the group, but to keep its progress through the grades fairly normal by enriching the individual subjects taken by these students. The pupils are still permitted to continue the French as at first or to take an additional subject.

II. Results of the First Set of Standard Tests

The first battery of standardized tests was given to the class between the last of March and the first of May, 1922. The tests used were as follows:

Charters Language Diagnostic Test, Pronouns, Form I
Monroe Arithmetic Reasoning Test, Form II, Test II
Thorndike-McCall Reading Scale, Form III
Woody-McCall Mixed Fundamentals Arithmetic Test, Form II

Table I shows for Group II the intelligence quotient (I.Q.) at the time of selection, the chronological age (C.A.), and the results of tests administered in March and in April, 1922. In this table, and elsewhere in this report, the pupils are arranged in order of their I.Q. in the Stanford-Binet test.

Certain points in regard to Table I are significant.

1. Although about seven or eight months previously, this class, Group II, started as approximately 4B, the medians in all the tests are equal to or superior to the 6B norms given by the authors of the tests. This is the more remarkable in view of the fact that the

TABLE I.—I.Q.'s† AND ACHIEVEMENT TEST RESULTS OF GIFTED CHILDREN IN LOUISVILLE SCHOOLS (MARCH AND APRIL, 1922)

GROUP II			THORNDIKE-MCCALL READING			WOODY-MCCALL ARITHMETIC		MONROE ARITHMETIC		CHARTERS LANGUAGE
Name	I.Q.	Chron. Age	R.A.	R.Q.	R.Ef.‡	Grade§	Score	Princ. Correct	Answers Correct	Score
*AA	185	105	178	169	91	8A	27	22	19	21
*BB	176	104	186	179	101	10A	23	21	17	26
*CC	166	115	186	163	99	10A	30	19	17	20
DD	160	118	164	138	86	7B	27	23	19	25
EE	152	127	198	156	102	12A	30	25	24	27
FF	149	115	150	130	88	6B	25	19	15	23
GG	148	119	127	107	72	4A	28	16	15	15
*HH	145	112	161	146	100	7B	25	16	12	22
II	145	101	152	151	104	6A	25	11	10	20
JJ	143	115	164	142	100	7B	30	17	13	19
KK	142	120	198	165	115	12A	31	24	23	29
LL	142	116	172	149	104	7A	29	17	14	19
MM	142	119	164	138	100	7B	29	20	18	27
*NN	141	113	178	157	112	8A	25	12	13	25
OO	141	127	164	129	91	7B	25	12	12	19
*PP	141	104	161	154	110	7B	24	22	15	25
*QQ	141	131	198	158	112	12A	22	17	16	25
*RR	140	126	178	132	93	8A	28	24	15	19
SS	140	119	172	144	103	7A	25	13	10	21
*TT	139	118	178	151	109	8A	26	19	18	20
UU	139	117	121	103	73	4A	21	20	14	28
*VV	137	107	178	166	121	8A	31	10	9	22
*WW	137	102	135	132	96	5A	23	13	9	20
*XX	132	113	152	134	100	6A	27	12	12	25
*YY	130	115	198	172	132	12A	25	14	14	21
Upper Quartile	148	118	178	157	104	8A	29	21	17	25
Median	142	115	164	149	100	7B	26	17	15	22
Lower Quartile	140	115	161	138	96	7B	25	13	12	20

*Boy.
†At time of admission
‡Reading efficiency, found by dividing reading quotient by I. Q.
§In Louisville, A is high and B is low.

chronological ages of these children are in general much lower than the usual 5th grade.

2. The median Reading Age is 164 months, while 50 percent of the Reading Ages are between 161 months and 178 months. This corresponds to a median school grade of 7B, with 50 percent of the scores lying between 7B and the end of 8A, while 16 percent make scores corresponding to the median for 12A. Attention is directed to the fact that, contrary to the usual findings as to the achievement of superior children, 64 percent of this group have Reading Quotients approximately equal to, or superior to, their Intelligence Quotients, including cases of 121 percent and 132 percent Reading Efficiency. The range below 100 percent Reading Efficiency is considerable; but the lowest score is made by a pupil who entered the class equipped with rural school training only.

Is the superior Reading Efficiency an indication of the value of segregation of gifted children into special classes under instruction such as these pupils have received, or may this fact be otherwise explained? Group I, which is not reported here, was found to have a still higher Reading Efficiency than Group II. Does the higher record of Group I, which has been segregated a year and a half longer, give further evidence leading to this inference?

3. The Woody-McCall Arithmetic scores for Group II range between the norm for the end of 5B and the norm for the end of 7A; the middle 50 percent of the class make scores to be expected of 6B and 6A.

4. We have been unable to obtain reliable norms for the Monroe Arithmetic Reasoning test. On ''Principles Correct'' the median for Group II is between the author's tentative norms for 6A and 7A.

5. On the Language test Group II has a median score equivalent to that for the beginning of 6A, with 50 percent between 6B and 7A.

III. RESULTS OF THE SECOND SET OF STANDARD TESTS

Approximately one year later Group II was tested by a similar battery of tests, namely:

Charters Language Diagnostic Test, Miscellaneous A, Form I
Monroe Arithmetic Reasoning Test, Form II, Test II
Thorndike-McCall Reading Scale, Form I
Woody-McCall Mixed Fundamentals Arithmetic Test, Form II
Woody Silent Reading, Forms I and II[3]

Table II gives the results for Group II (now parallel to 6A).

1. From Table II we note the very superior reading scores of a number of the pupils. Twenty-three percent (four pupils) in

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[3] This is a test not yet on the market, described by Dr. Woody at the Cleveland Meeting of the Directors of Educational Research, March 1923. Each form consists of nine paragraphs of graded difficulty. Each paragraph is followed by five statements including ideas expressed in the paragraph. The pupil is to check the one statement which best expresses the main thought of the paragraph.

TABLE II.—RESULTS OF ACHIEVEMENT TESTS OF GIFTED CHILDREN IN LOUISVILLE SCHOOL

(April and May, 1923)

GROUP II	THORNDIKE-MCCALL READING				MONROE ARITH.		WOODY ARITH.	WOODY READING		CHARTERS Language
								Forms		
Name	R.A.	R.Q.	R.Ef.	Grade	Princ. Correct	Answers Correct	Score	1	2	SCORE
*AA	218	186	100	Superior Teacher	27	21	28	3	4	27
*CC	203	159	96	12A	27	18	34	6	6	25
*EE	218	157	103	Superior Teacher	27	20	31	7	5	30
FF	164	129	87	7B	—	—	—	8	7	24
GG	124	94	63	4A	16	7	27	2	3	12
*HH	218	173	119	Superior Teacher	21	21	27	3	6	30
II	169	150	103	7A	19	13	26	4	3	26
JJ	181	143	100	9B	19	17	32	4	5	22
KK	218	165	116	Superior Teacher	27	21	32	7	6	25
LL	169	132	93	9B	24	17	30	6	5	26
*NN	152	121	85	6B	17	15	29	6	3	25
*PP	164	140	100	7B	21	11	26	4	4	20
*RR	203	146	104	12A	19	16	27	1	—	—
SS	192	148	105	11A	22	14	29	5	8	27
*TT	169	130	94	7B	21	20	28	4	9	28
*VV	181	150	109	9B	16	13	27	3	1	21
*XX	164	131	100	7B	27	15	24	4	5	13
*YY	192	147	113	11A	24	19	32	4	5	23
Upper Quartile	203	159	104	12A	27	20	31	6.3	6.3	27
Median	181	147	100	9B	22	17	28	4.5	5.2	25
Lower Quartile	169	132	94	7B	19	14	27	3.7	3.9	22
Grade Norms	160	100	—	end of 6A	15.5	10.2	25	4.4	4.4	17.7

*Boy

Group II made scores equal to or above the norm for 'superior teachers.' An additional 12 percent (two pupils) in Group II made scores equal to or above the high-12th-grade norms. Only 35 percent fall below the low-9th-grade norms.

2. In the Monroe Arithmetic Reasoning test there is considerable improvement shown over the preceding year in the medians and quartiles of Group II in both 'Principles Correct' and 'Answers Correct' (the scores of those in this class a year before, who have now dropped out, were about equally distributed above and below that year's median). The change in speed is also balanced; *i.e.*, of the present group some worked faster and some slower than in the preceding year. There seems to be no definite relation for this group between change in speed and change in accuracy.

3. Comparing the scores of Group II with those made a year before by the same group on Form I of the Woody-McCall Mixed

Fundamentals Arithmetic test, we note improvement of from one to four problems in all cases except four. In two of these cases the loss was only one problem.

4. On the Charters Language test (Miscellaneous A) the highest norm given (22.2) is for 8A. Seventy-five percent of Group II make scores equal to, or above, this norm. Comparison of the results of this test with the results obtained with the form used the preceding year is precluded on account of the different elements measured.

5. On Forms I and II of the Woody Silent Reading Scale the scores of Group II slightly exceed the tentative norm for the 7th grade, and equal or exceed the norm for a parallel 7B.

Both forms of this test were given to two 5B groups in different schools, these classes having approximately the same chronological ages as Group II. One of these Groups had a median reading quotient on the Thorndike-McCall Reading Scale, Form I, of 122. Its median for Woody Silent Reading, Form I, was 5.5; for Form II, 4.3. The other 5B class had a median reading quotient on the Thorndike-McCall Reading Scale of 100. Its median for Woody Silent Reading Scale, Form I, was 4.2; for Form II, 4.5. Our findings give no adequate explanation of the fact that Group II has a median not appreciably higher than that for the two 5B classes and the parallel 7B class. The fact that medians for all these classes are the same and equal to the author's tentative 7A norm is in itself interesting.

IV. RESULTS OF THE THIRD SET OF STANDARD TESTS

About the middle of October 1923, Group II was given the Stanford Achievement Test, Advanced Examination, Form A.[4] This seemed to offer a fairly complete battery of tests, and possessed the further advantage of having all the scores expressed in terms of age, all derived in the same manner, and presumably from the same students. These facts make more reliable the comparisons from age to age, and lend significance to the Composite Educational Age.

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[4] This test includes: 1. Reading (a) Paragraph Meaning, (b) Sentence Meaning, (c) Word Meaning; 2. Arithmetic (a) Computation, (b) Reasoning; 3. Nature Study and Science; 4. History and Literature; 5. Language Usage; 6. Spelling (in sentences dictated).

In Table III are shown the individual Achievement Ages and Achievement Quotients for the various subjects and for all subjects combined.

It is to be noted that the range of Reading Ages in this test is from 158 months to 207 months, and of Reading Quotients is from 114 to 165. The median Reading Age is 188 months and Reading Quotient is 143 months. This shows a closer range of Reading Ages and Reading Quotients than appeared in either of the Thorndike-McCall Reading Scales. The order of both Reading Age and Reading Quotient varies considerably in the two types of tests. This difference may be due in part to the fact that the Stanford Reading score includes not only understanding of paragraphs, but also sentence meaning and word meaning. It is doubtless influenced also by the fact that the Stanford "paragraph meaning" test required, in general, keeping in mind the whole thought of the paragraph, while the Thorndike-McCall Scale calls for attention to one small unit at a time.

The median Reading Quotient in the Stanford test equals the median I.Q. of the Group and only two pupils make a Reading Quotient below the lowest I.Q. for the group (130).

The median History and Literature Quotient and the median Language Quotient also approximate the I.Q. In considering the lower achievement quotients, namely the median Spelling Quotient of 124 and the median Nature Study and Science Quotient of 128, we may note that spelling rarely correlates highly with intelligence and that scientific nature study receives its major emphasis in the upper grades. The educational ages for even these subjects indicate an attainment presumably equivalent to the first year of the high school. (The authors give no grade equivalent as high as the majority of these scores.)

Using the median Composite Educational Age of this test as the sole criterion, it would appear that *these pupils are apparently already doing a type of work equivalent to that done by superior high-school students.*

TABLE III.—RESULTS ATTAINED BY THE LOUISVILLE GIFTED CLASS (GROUP II) ON THE STANFORD ACHIEVEMENT TEST

	READING		ARITHMETIC		NATURE STUDY AND SCIENCE		HISTORY AND LITERATURE		LANGUAGE USAGE		SPELLING		EDUCATIONAL	
Name	Age	Quo.	Age	Quo.	Age	Quo.	Age	Quo.	Age	Quo.	Age	Quo.	Age	Quo.
AA	205	165	210	170	187	151	194	156	199	162	172	139	198	159
CC	188	143	210	156	174	129	195	145	192	143	161	123	189	141
EE	201	139	200	139	196	134	201	139	222	153	165	113	195	133
FF	191	143	168	125	177	132	186	139	189	141	150	112	175	131
GG	158	114	168	121	153	111	157	114	156	112	156	112	158	114
HH	188	131	191	134	172	120	204	142	196	137	186	130	189	131
II	188	158	176	146	156	131	178	148	196	165	207	174	183	154
JJ	187	140	180	135	177	133	193	144	170	127	151	113	175	131
KK	207	150	214	154	176	126	191	137	201	144	184	132	200	144
LL	181	134	194	145	163	121	178	132	189	140	172	128	181	134
NN	191	144	172	130	190	143	199	151	189	143	178	135	184	139
PP	189	152	188	152	190	153	207	167	196	158	186	150	192	155
RR	189	129	186	127	177	121	195	134	215	140	180	123	186	127
SS	191	139	188	137	149	109	171	125	210	154	169	124	180	131
TT	198	144	178	129	183	132	183	132	172	124	166	120	180	130
VV	182	144	180	142	162	128	182	144	201	160	186	147	181	143
YY	188	136	194	142	168	121	191	138	183	132	169	122	184	133
Upper Quartile..	191	144	194	146	183	133	195	145	199	154	184	135	189	144
Median...	188	143	186	139	176	129	191	139	196	141	172	124	181	133
Lower Quartile..	188	136	178	130	163	121	182	134	189	139	166	120	180	131

Single tests, or even two or three such tests, are not always adequate measures of the attainments of individual pupils. This is shown by the discrepancies in the test scores reported in this study. The discrepancy may be due (1) to the effect of specific training for speed, as in the Monroe Arithmetic Reasoning test, (2) to the fact that different abilities are measured, as in the two forms of the Charters Language test; (3) to unequal values of scale steps, as in the Thorndike-McCall Silent Reading test; or (4) to the fact that the upper limit of a test may be too low or may have been arbitrarily determined.

Thus, the fact that few individuals in Group II make scores involving the last four questions of Form 3 in the Thorndike-McCall Reading and that they do show improvement when later measured by Form I, may indicate the value of the scale for pupils in the lower ranges of ability. The results secured from administering this test to 10,000 pupils (Grades 4 to 8) in the Louisville Schools show relatively high scores for the intermediate grades, and relatively low scores for the upper grades. This fact tends to substantiate these inferences.

The presence of so many perfect scores in the Monroe Arithmetic test, the Charters Language Test, and of so many scores above the 8th-grade norm in the Woody Arithmetic test (which the gifted children generally completed in about 15 minutes) indicates that these tests are not adequate measures of the achievements of gifted classes in the upper grades.

Again, the scores for Subject Ages about fourteen in the Stanford Achievement Test have been obtained, not on the basis of the averages for unselected age groups, but, as the authors explain, by extension "upward to include year 18 upon the basis of the normal distribution of subject and educational ages." (*Manual*, p. 41). The arbitrary selection of Year 18 as the upper limit sets a limit on the possible achievement quotient as the pupils approach Year 14.

The fact that a given test measures only a small portion or a single phase of a given subject makes it essential to state definitely that a pupil's achievement is such an amount *in terms of this particular scale.* Note the difference of elements measured in Charters Pronoun test, Charters Miscellaneous A and in the Stanford Language, for instance. The first two include only points in technical grammar while the latter involves discrimination in the choice of words. The three forms of reading in the Stanford Achievement test, the Woody Silent Reading test, and the Thorndike-McCall Scale measure distinctly different elements, and none measures specifically *speed* of reading. The proper weighting of the different phases of a complex act like reading presents a problem as yet unsolved.

If, as some authorities assume, mental growth ordinarily ceases at the approximate age of sixteen, to what mental age may gifted children attain before this development ceases? Or, in what other terms than mental age may we express such intellectual maturity? Is it yet proved that development ceases at this time, or is Dr. Link correct in pointing out diversity of environment and training as efficient stimuli for different types of development, or as complicating the problem of measuring development versus special training, etc.

Results of subsidiary Binet tests, given in October, 1923, in comparison with the scores of the Stanford Achievement test, as well as those obtained for the Thorndike-McCall Reading Scale, Form 3, indicate that *under appropriate treatment the gifted child tends to measure up in achievement to the standard set by his mental age.*

V. Results of Standard Tests of Social and Temperamental Traits

In order to have a measure of some of the social and temperamental traits, the Downey Group Will-Temperament test and the Chassell-Upton Citizenship scale, Forms D and G, were selected. Pupils of the two gifted classes and of the parallel groups rated themselves on Forms D and G of the Citizenship scales. Departmental teachers, thoroughly acquainted with the children, rated all groups on Scale D. The following facts are interesting:

1. All three teachers rate the children higher than they rate themselves.

2. The average difference between the teacher ratings and the self ratings is about 35 points.

3. On Scale D, for the children in the regular grade, the range of ratings by teachers is 270 to 300, while the range of self ratings is 240 to 270.

4. On Scale D, for the gifted children, the range of ratings by teachers is 330 to 378, while the range of self ratings is 270 to 310.

5. The teachers rate gifted children very much higher than they rate the members of the regular classes, while the gifted children rate themselves just above the range which the children in regular grades apply to themselves.

6. The correlation between the teacher ratings and self ratings on Scale D is plus .08.

7. The correlation between self ratings on Scale D and Scale G is plus .68.

The two purposes for which a scale of this type may be valuable are (1) as a device for classifying pupils, and (2) as a teaching device, serving to focus the attention of the children on the qualities in which development is needed. The following difficulties in such a scale are noted by the authors—namely, (1) the subjective nature of the judgments, (2) the absence of a uniform standard as to what constitutes average attainment in a given habit or attitude, and (3) the inability of the teachers to know the status for every pupil of the many habits and attitudes listed. Owing to these handicaps, our results indicate that the chief value of the Citizenship scale is as a teaching device.

Pupils of the two gifted classes and of the control group took the Downey Group Will-Temperament test in May, 1923. While Dr. Downey does not consider the total scores (for adults) very significant, it is interesting to note that in the younger gifted class, Group II, there is only one pupil who makes as high a score as the lowest total score (61) of the older gifted class, Group I. Since there is a larger number in each of the control groups, the range of total scores for them is wider, but the median and lower quartile for the 7B group are 7 or 8 points lower than for the 8A group. The upper quartiles of these control groups are identical with the median (64) for Group I.

About 25 percent of the control groups may be readily classified as slow, while 25 percent of the gifted groups are of the quick type. About 9 percent of the gifted groups are 'slow' and 22 percent are 'forceful.' The majority of the remainder are 'atypical.' The parallel groups show about 18 percent 'forceful,' 18 percent 'atypical,' 18 percent 'balanced,' and 6 percent 'quick,' while the remainder are scattered through the other classifications. The specific ''profiles,'' differentiating themselves on the basis of the first four traits, the next four traits, and the last four traits, are more definitely marked in Group I than in Group II. Since the quick and the forceful types are most characteristic of Group I and these types are frequently found with high scores, it is probable that the differentiating into quick and forceful types occurs more rapidly in early adolescence among gifted children than among normal children.[5]

The following similarities of all groups may be of interest: (a) low on speed of movement, (b) low on co-ordination of impulses, (c) medium on flexibility, (d) medium to high on motor impulsion.

The following differences are also noted:

1. Group I ranks from medium to high on speed of decision. Group II shows a scatter, and the control groups rank from low to medium.
2. Group II and the control groups are low on 'self-confidence,' while in Group I 50 percent score high on 'self-confidence.'
3. Group II is low to medium on 'non-compliance,' while Group I and the control groups show a wide scatter.
4. In 'interest in detail' Group II and the control groups score high, while Group I shows differentiation into high and low.
5. On 'volitional preservation' Group I and 7B show a wide range, Group II scores low, and 8A scores medium to high.

The points of similarity and difference of these traits among the various groups is verified by the judgment of the principal of the departmental school and by the ratings for these traits on the Chassell-Upton scales.

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[5] It should be noted here that Dr. Downey's scoring was determined on the basis of results made by adults and that these were distributed on a percentile basis rather than on that of the normal distribution curve.

These scales do not test initiative, which the teachers and principals consider to be the most marked trait of gifted children, nor have we found appropriate measures for the traits involved in personal relations, such for example as tact, leadership, subordination to the group, co-operation with the group, etc.[6]

VI. CONCLUSIONS

What conclusions, then, may we draw from the data presented in this paper?

1. In all academic work, so far as these tests are able to measure it, these gifted pupils are superior to the normal for their age or grade.
2. In order to measure adequately the achievements of gifted pupils in the upper grades, more difficult tests than those used in this study must be employed.
3. Selection of tests with scores expressed in terms of educational age is essential to the formulation of any valid conclusions as to the relation of achievement and intelligence.
4. The limitations of the tests available do not permit us to say with certainty whether or not these gifted pupils have an achievement quotient equal to their intelligence quotient. These groups, however, seem to approach that goal more nearly than do gifted children in the regular classes.
5. The Downey Group Will-Temperament test furnishes a means for roughly picking out certain characteristics of the individuals and of the groups tested.

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[6] Information as to the personal and social aspects, and the administrative aspects in the education of gifted children has been furnished the appropriate committees of the SOCIETY, hence details with reference to these aspects have been omitted from this discussion.

C 3. STANFORD ACHIEVEMENT TESTS WITH A GROUP OF GIFTED CHILDREN

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The comparisons of this article are based on mental ages rather than chronological, leaving for another article the discussion of validity of Stanford-Binet and other intelligence quotients at extremely high levels. For present purposes, validity will be assumed, and predictions of achievement based on mental measurements will be checked up by actual achievement on educational tests.

The subjects of this study were 52 superior children in the Special Opportunity Class of Public School 165, Manhattan, described in other articles in this volume.[1] This class was started in September, 1922, as a public school experiment, by a committee composed of two representatives from the school and three from Teachers College. The purposes of the committee were to provide a better educational grouping for approximately 50 children with intelligence quotients over 135; to determine experimentally, so far as possible, what was the best educational procedure to follow with the group and with other groups similar in respect to intelligence; and to provide such of these opportunities for this group as seemed feasible. Fewer than 50 children had been located when school opened, so that enrollment continued until January first. By November first the group contained about 30 children, and was then divided and placed in two rooms; the children in one room were of I.Q. from 135 to 154, and in the other 155 to 190. The children came from Grades III-A to VI-B, inclusive. Chronological ages ranged approximately from 7½ to 9½. These two groups remained constant, except as described, during the school year 1922-23, with the exception of three or four exchanges of children from one group to another, the withdrawal of six children, and the enrollment of six others. More informal methods of instruction than are usual in public schools were introduced in the rooms, but changes in curriculum have been limited by the necessity of meeting the minimal requirements of the public school system. Curriculum changes will, it is hoped, become progressively more possible. One reason for adhering to these standards was the possibility that children might move away, or for other reasons withdraw from the class at any time, and it was desirable that they should be able to transfer to a specific grade in another public school, rather than to have difficulty in classification. Children of high ability in arithmetic, spelling, etc., as indicated by educational tests, were excused from regular daily work in these subjects. French was added to the curriculum. Excursions to illustrate various topics studied were instituted beyond the usual number arranged for regular classes. It was not, however, the aim of the committee to have these children cover the curriculum as rapidly as possible. It was rather to offer a more extended curriculum 'enrichment' rather than speed.

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[1] See Article by Hollingworth and Taylor.

At the beginning of the second year, September, 1923, French was continued, and a group of 22 of the children began the study of algebra. In addition, a study of civilization, or of man's activities, was made the center of interest, and is being developed jointly by the children and those in charge. After school hours, play groups have been organized. A small group for voice culture has been formed by the parents of some of the children. Classroom equipment is gradually being acquired beyond that of the average schoolroom of the corresponding grades, particularly library books and scientific apparatus. In brief, this group differs from others in that especially intelligent children of approximately the same chronological age have been brought together, while the usual school environment and curriculum have been somewhat enriched.

On September 14, 1923, these children were given the Stanford Achievement Test. Six children were absent; five of these took the test during the month, and one on November 20th. For comparison with these results, mental ages were reckoned as of September 14, 1923, on the basis of the first Stanford-Binet Intelligence Test which each child had taken. Table I shows in detail, for each individual, the chronological and mental ages and the grade status of September 14, 1923, and the grade standing reached in each test of the Stanford Achievement Test. The following gen-

FIG. I.—DISTRIBUTIONS OF CHRONOLOGICAL AGE, PRESENT GRADE STATUS, EDUCATIONAL AGE, AND MENTAL AGE
Vertical Lines Indicate Medians

Median C. A.
Median Grade
Median E. A.
Median M. A.

1b. Present Grade Status

4A	4B	5A	5B	6A	6B	7A	7B	8A	8B	9A
52 44	51 50 42 40	49 48 47 46 43 41 39 35 32 30 23 20 8	45 38 37 34 33 28 11	31 29 22 21	36 27 26 25 24 18 17 9	19 16 15 14 13 12 4	10 6 5 3 2	7		1

1c. Educational Age, Stanford Achievement

11^0	11^6	12^0	12^6	13^0	13^6	14^0	14^6	15^0	15^6	16^0	16^6	17^0	17^6	18^0
52 51		50 49 48	47 46 45 44 43 42 41 40	39 38 37	36 35 34 33 32 31 30	29 28 27 26 25 24 23 22 21 15 20	19 18 17 16 14	13 12 11 10	9 8 7	6 5 4	3 2			1

1a. Chronological Age

1d. Mental Age, Stanford Binet

	7^0	7^6	8^0	8^6	9^0	9^6	10^0	10^6	11^6	11^6	12^0	12^6	13^0	13^6	14^0	14^6	15^0	15^6	16^0	16^6	17^0	17^6	18^0	18^6	19^0	19^6
1a.	48		30	44 28 25 20 13	52 51 50 49 47 42 40 38 36 35 34 33 29 23 22 8	46 43 41 37 32 27 26 21 12 11 9 4 3 2	45 39 31 24 19 18 17 15 10 7 6 1	16 14 5																		
1d.											48 29	41 40	51 50 49 47 44 42 38 35 25	46 43 37 34 30 28	52 45 39 33 22 19 12	32 31 23 21 20 14	36 15 4	18 17 13 9 8 7 6	27 26 24 16 11 3	5	10 2					1

TABLE I.—GRADE-STATUS AND EDUCATION, MENTAL, AND CHRONOLOGICAL AGES OF FIFTY-TWO GIFTED CHILDREN

Pupil	Par. Read.	Sent. Rdg.	Vocab.	Spell.	Lang. Usage	Hist. Lit.	Arith. Prob.	Arith. Comp.	Science and Nature Study	Total Score	Educ. Age	Men. Age	Chron. Age	Pres. Grade
1.	H. S.	H. S.	H. S.	H. S.	H. S.	H. S.	H. S.	H. S.	H. S.	98.5	18–0	19–6	10–3	H. S.
2.	H. S.	H. S.	H. S.	H. S.	H. S.	H. S.	H. S.	H. S.	8	89.6	16–10	17–4	9–10	7B
3.	H. S.	H. S.	H. S.	H. S.	8	H. S.	H. S.	H. S.	8	87.85	16–7	16–4	9–9	7B
4.	9	9	H. S.	H. S.	H. S.	H. S.	H. S.	H. S.	7B	86.45	16–4	15–2	9–8	7A
5.	9	H. S.	H. S.	H. S.	H. S.	H. S.	9	H. S.	7B	85.45	16–3	16–9	10–8	7B
6.	H. S.	H. S.	H. S.	H. S.	H. S.	H. S.	H. S.	H. S.	7	83.9	16–1	15–7	10–5	7B
7.	9	H. S.	H. S.	H. S.	7	H. S.	8	H. S.	8	82.65	15–11	15–9	10–1	8A
8.	H. S.	H. S.	H. S.	9	H. S.	H. S.	8	6	H. S.	80.4	15–8	15–10	9–2	5A
9.	H. S.	H. S.	H. S.	H. S.	9	H. S.	H. S.	6	8	80.15	15–7	15–6	9–8	6B
10.	8B	H. S.	H. S.	H. S.	8A	9	8	8	6	77.4	15–3	17–5	10–1	7B
11.	H. S.	H. S.	H. S.	H. S.	H. S.	9	7	6A	8B	77.3	15–3	16–1	9–11	5B
12.	8B	H. S.	H. S.	H. S.	H. S.	H. S.	7B	8A	6	77.15	15–3	14–4	9–11	7A
13.	8B	6	6	H. S.	H. S.	H. S.	8	H. S.	7	76.15	15–1	15–6	8–11	7A
14.	7B	9	9	9A	7B	H. S.	7B	7	7B	73.65	14–10	14–9	10–6	7A
15.	6	8A	9A	H. S.	9A	8B	8	8A	6B	72.55	14–8	15–1	10–3	7A
16.	8B	9	7B	8	7	H. S.	8	8A	6	71.1	14–7	16–2	10–9	7A
17.	7	6B	8	H. S.	9A	9	7B	7B	7A	71.95	14–7	15–8	10–2	6B
18.	H. S.	6B	9	9	H. S.	8	6B	8	6	71.4	14–6	15–6	10–2	6B
19.	7	6	7B	9	7B	8B	H. S.	7B	7	71.35	14–6	14–4	10–5	7A
20.	7A	9	8A	9	8	9	7B	5	7	69.45	14–3	14–6	8–10	5A
21.	8A	6	7	H. S.	5B	7B	8A	8	6B	68.15	14–2	14–8	9–10	6A
22.	9	H. S.	8	8A	9	7A	7	6	6	68.1	14–2	14–5	9–1	6A
23.	8A	H. S.	9A	7	7B	H. S.	6B	6	6	67.4	14–1	14–6	9–5	5A
24.	7	9	8A	8A	7B	7B	8	6	6B	67.4	14–1	16–2	10–2	6B
25.	7	7	7A	H. S.	7	6B	6B	6	7A	67.4	14–1	13–0	8–8	6B
26.	7	9	8B	7B	7	7	7B	6A	7	67.0	14–1	16–4	9–7	6B
27.	7	9	8	7	9	7	8	6	7	66.8	14–1	16–4	9–11	6B
28.	8B	8	7	H. S.	8	6B	6B	5B	7	66.8	14–1	13–10	8–10	5B

Pupil	Par. Read.	Sent. Rdg.	Vocab.	Spell.	Lang. Usage	Hist. Lit.	Arith. Prob.	Arith. Comp.	Science and Nature Study	Total Score	Educ. Age	Men. Age	Chron. Age	Pres. Grade
29.	7B	6B	7B	7B	8	9B	7B	6	7A	66.5	14–0	12–2	9–1	6A
30.	7	6B	7	8B	6B	7B	7B	6	7B	66.25	13–11	13–11	8–4	5A
31.	7	8A	7A	9	H. S.	7B	7	5B	5B	66.15	13–11	14–10	10–3	6A
32.	H. S.	H. S.	7B	7	H. S.	7B	7	5B	5B	65.9	13–11	14–6	9–6	5A
33.	6	9	9	7A	H. S.	8A	6	7B	6	65.35	13–10	14–2	9–4	5B
34.	7	9A	8	7B	6	8B	8A	5	5B	63.75	13–8	13–10	9–3	5B
35.	7B	8	7	7B	8	7	6B	5	6	62.9	13–7	13–0	9–2	5A
36.	7B	6	7	8	7	7	7A	H. S.	4	62.7	13–7	15–0	9–3	6B
37.	7	7	6A	6A	7A	8A	7	7B	6	60.35	13–3	13–10	9–11	5B
38.	6B	5	6A	8A	8A	7	7	7A	5	59.9	13–3	13–2	9–5	5B
39.	7B	7	7B	7A	8	8A	6	4	7B	59.3	13–2	14–3	10–2	5A
40.	6B	8A	7B	5	6B	8	6	5B	6A	56.6	12–11	12–8	9–4	4B
41.	6A	7B	7B	6B	6	7A	6B	5A	6	56.1	12–10	12–11	9–6	5A
42.	6	8A	7B	6B	5	8B	7A	5	5A	55.95	12–10	13–3	9–0	4B
43.	7	8A	7	5B	6A	7	7A	5B	5	55.45	12–9	13–10	9–10	5A
44.	7B	7A	7B	4	H. S.	8B	6	5	6A	55.05	12–9	13–3	8–7	4A
45.	5	7	6	6	4	6	7A	7	5B	54.9	12–9	14–3	10–0	5B
46.	7B	6A	5	7	6A	8A	6	4B	5	54.35	12–8	13–6	9–6	5A
47.	5	6	5B	7B	7	7	7A	4	5A	53.15	12–6	13–1	9–3	5A
48.	6	5	6A	6B	6	6	7A	5B	5A	52.55	12–5	12–4	7–4	5A
49.	7	6B	6	5	8A	7A	5B	5	5B	52.1	12–4	13–4	9–5	4B
50.	5A	6	7	6B	7	7A	5	5	5B	51.75	12–3	13–0	9–4	5A
51.	6A	4	5	5	5B	4	6A	4B	5B	42.3	11–4	13–2	9–3	4B
52.	4B	5	5	4B	5A	5	7	5	4A	41.1	11–3	14–5	9–4	4A

*7a is first semester, 7B second semester of the 7th year; the rating 7 is between 7A and 7B; and correspondingly for other grades. H. S. means beyond 9th Year.

TABLE II.—SUMMARY OF RESULTS, STANFORD ACHIEVEMENT TEST

Test	Score Aver.	Grade Aver.	Identification Number	Educational Age Lowest	Educational Age Aver.	Educational Age Highest	Identification Number
1. Paragraph Meaning....	77.96	7B	(52)*	10.9	14.5	18.0	(1)
2. Sentence Meaning......	55.25	8A	(51)	10.5	14.6	17.9	(3)
3. Word Meaning........	55.54	8A	(51, 52)	11.7	14.4	18.4	(1)
4. Arithmetic Computation.............	106.92	6	(39, 47)	10.6	13.4	17.10	(2, 4)
5. Arithmetic Problems...	83.77	7B	(50)	11.8	14.3	19.6	(1)
6. Science and Nature Study..............	49.34	6	(52)	9.6	12.11	17.2	(1)
7. History and Literature.	53.39	8	(51)	9.6	14.8	17.8	(1)
8. Language Usage.......	33.65	8A	(45)	10.4	14.5	17.6	(1)
9. Dictation.............	154.0	8A	(44)	10.11	14.6	20.0	(1)
Total...............	67.40	7B	(52)	11.3	14.1	18.0	(1)

*Individuals are numbered in Table I; these numbers are used throughout the article for reference to individuals.

This table is read thus: In paragraph meaning the average score is 77.96, which is a 7B average; the lowest educational age in this test is 10.9 years, gained by Pupil No. 52; the average educational age is 14.5 years; the highest 18.0 years, gained by Pupil No. 1.

TABLE III.—DISTRIBUTION OF FIFTY-TWO GIFTED PUPILS BY MENTAL AGE AND BY EDUCATIONAL AGE

Mental Age (Stanford-Binet)		Educational Age (Stanford Achievement)
1	19–6	
	19–0	
	18–6	
	18–0	1
	17–6	
10 2	17–0	
5	16–6	2 3
27 26 24 16 11 3	16–0	4 5 6
18 17 13 9 8 7 6	15–6	7 8 9
36 15 4	15–0	10 11 12 13
32 31 23 21 20 14	14–6	14 16 17 18 19
52 45 39 33 22 19 12	14–0	20 15 21 22 23 24 25 26 27 28 29
46 43 37 34 30 28	13–6	30 31 32 33 34 35 36
51 50 49 47 44 42 38 35 25	13–0	37 38 39
41 40	12–6	40 41 42 43 44 45 46 47
48 29	12–0	48 49 50
	11–6	
	11–0	51 52

eral tendencies are evident from Tables I to III and the accompanying graphs, Figures 1a to 1d.

1. Not only is there a general tendency for these children to stand above their chronological age in the Stanford Achievement Test, but it is literally true, as is shown in the age distributions by tests in Tables IVa to IVk, that there is no child in the group who does not stand better than the average for his chronological age in every single one of the tests.

TABLE IV.—DISTRIBUTIONS OF AGES ACHIEVED BY FIFTY-TWO GIFTED PUPILS ON THE SEVERAL TESTS IN THE STANFORD ACHIEVEMENT TEST

Subject age	9^6	10^0	10^6	11^0	11^6	12^0	12^6	13^0	13^6	14^0	14^6	15^0	15^6	16^0	16^6	17^0	17^6	18^0
4a. Paragraph Meaning			52	50	47 45	51	42 41 15	48 33	49 46 40 38 34 27 25 24 19	44 43 39 37 36 31 30 29 26 20 18 14	35 23 21	28 16 13 12 10 7 4	22 18 5	32 11 9 8 2	6	3		1
4b. Sentence Meaning		51		52 38	48	46	50 47 21 19 13	49 44 36 30 29 18 17	45 39 37 25 15	42 41	43 40 31 28	35 34 4	33 27 26 24 20 16 14	23 12 9 7 5	6 2 1	10 8	22 11 3	
4c. Word Meaning					52 51 46	47	49 48 45 38 37 13		50 43 31 30 25 21	44 42 41 40 39 36 35 32 29 28 20 19 16	34 27 24 17	26 23 22 15	33 18 14 11	10 9 4	12 7 6 2	3	8 5	1
4d. Total, Reading				52 51		50 48 47 38	46 45	49	44 42 41 37 36 30 29 25 21 19 15 13	43 40 39 35 31 17	34 33 28 27 26 24 20 18 16	32 23 14	12 4	22 10 9 7 5	11 8 6 2		3 1	

4e. Arithmetic Computation

10^6	11^0	11^6	12^0	12^6	13^0	13^6	14^0	14^6	15^0	15^6	16^0	16^6	17^0	17^6	18^0	18^6	19^0	19^6
47 39	51 46 41	52 50 49 44 42 35 34 20	48 43 40 32 31 28 26 11	30 27 25 24 23 22 9 8		38 29 14	45	37 33 21 19 18 17 16 15 12	10	36 1	7 6 3	5 13		4 2				

4f. Arithmetic Reasoning

10^6	11^0	11^6	12^0	12^6	13^0	13^6	14^0	14^6	15^0	15^6	16^0	16^6	17^0	17^6	18^0	18^6	19^0	19^6
		50 49	51 46 44 39 33	40	42 41 35 28 23 18	48 47 45 43 36 22	52 37 32 31 30 29 20 19 17 14 12 11	34 27 26 25 24 21 16 15 13 10 8 7	5	9 6	19	4 3 2						1

4g. Total, Arithmetic

9^0	10^0	10^6	11^0	11^6	12^0	12^6	13^0	13^6	14^0	14^6	15^0	15^6	16^0	16^6	17^0	17^6
				51 50 49 47 46 39	44 42 41 40 35	52 48 43 28 20	34 32 31 23 22 11	45 38 33 30 29 26 25	37 26 24 18 17 14 8	36 21 16 15 12 9	19 10	13 7	6 5 3		4 2	1

4h. Nature Study and Science

9^0	10^0	10^6	11^0	11^6	12^0	12^6	13^0	13^6	14^0	14^6	15^0	15^6	16^0	16^6	17^0	17^6
52	36	48 47 42	46 45 43 38	51 50 49 34 32 31	44 40 12	41 37 35 33 23 22 18 16 15 10	25 24 21 17	29 28 27 19 13 6	39 30 26 20 14 5 4	9 7 3 2	11	8			1	

4i. History and Literature

9^0	10^0	10^6	11^0	11^6	12^0	12^6	13^0	13^6	14^0	14^6	15^0	15^6	16^0	16^6	17^0	17^6
51			52		48	45	50 49 41 36 28 27 25 22	47 43 38 35 26	46 39 37 33 32 31 30 24 21	44 42 40 34 19 18 15	11	29 20 17 13 10	23 16 14 9 8	12 7 6 4 2	5 3	1

4j. Language Usage

10^0	10^6	11^0	11^6	12^0	12^6	13^0	13^6	14^0	14^6	15^0	15^6	16^0	16^6	17^0	17^6	18^0	18^6	19^0	19^6	20^6
45	52 42	51 21	46 43		41 30	40 37 30 26	50 47 36 25 16 7	49 24 23 19 14 10	48 39 38 35 20	29 28 17 15 9 3	44 27 22 12 8 6 5 4	33 32 13 11	31 18	2		1				

4k. Spelling

10^0	10^6	11^0	11^6	12^0	12^6	13^0	13^6	14^0	14^6	15^0	15^6	16^0	16^6	17^0	17^6	18^0	18^6	19^0	19^6	20^6
	44	52 43 40	49	37	42 41	51 50 48 45 39 33	46 32 27 23	47 35 34 29 26 22	38 24 16		36 31 30 20 19 18 14	15 8	21 17 13 12 11 6	28 9	25 10 5 3 2	7 4				1

2. The median educational age is fourteen years, one month. Comparison of the age and grade standards given in the Manual indicates that, according to the data on which these tests were standardized, fourteen years and one month corresponds to a VII-B grade. This is a year and a half higher in general than the present grading of the children.

3. There is a general tendency for a child to stand considerably higher in the Stanford Achievement Test than his grade-status would indicate. The grade-status had been determined on the basis of a considerable number of educational tests which had been given monthly during the past year. In a good many cases these educational tests had indicated grades very much higher than those from which the pupils came. The committee had been very conservative in its changes. One general principle had been that a child whose facility in an important tool subject was low, should be labelled with a correspondingly low grade-status. The Stanford Achievement level is, however, an *average* of all the subjects, and might still be high for a child who was low in one important subject. This difference, in the main, accounts for the generally higher level of achievement on the Stanford test.

4. More than one-third of all the ratings in all subjects taken together are first-year high school or better. Since only one child makes this rating in all subjects, and only three make it in eight of the nine subjects, this means that *more* than one-third of the group made a high-school rating in a majority of their tests—say in six or seven on the nine (see Table I).

5. There is a general tendency for the standing in those tests which are largely dependent on language to be higher than the standing in the tests in arithmetical and scientific material. Since these children had been in school on the average certainly less than four years, and now make grade standings which are from one to three years higher than the fourth grade, it is obvious that a great deal of their education has been obtained outside of the schoolroom. It is fairly obvious, also, that it is much easier for a child to teach himself to read and to practice reading than it is for him to teach himself arithmetic and to practice arithmetical processes. Moreover, the reading matter which is easily available to children

up to the ages of nine and ten contains a great deal more information in the fields of history and literature than it does in the fields of science and mathematics. This general tendency which is made apparent by the higher medians in the language subjects is, then, one which is quite readily comprehensible in terms of the description of the group under consideration.

6. There is a general tendency for a child's educational age on the Stanford Achievement Test (average 14 years, 1 month) to be slightly lower than his mental age as indicated by the Stanford-Binet Test, (average 14 years, 5½ months). Most of the other studies of accomplishment show that gifted children under ordinary conditions are not working up to their ability. It is to be expected that under the present type of grouping and training this should, in general, gradually cease to be true.

The distribution of accomplishment quotients to be given later indicates that the group is at present almost up to average in this respect. A study of the Stanford Achievement test results on similarly gifted children who had remained in regular classrooms would be necessary in order to determine what part the present treatment had played in bringing about this relatively high accomplishment level. It is hoped to make this study during the current year.

It is interesting to note some of the unusual performances of individual children. A great deal of specialization of performance is evident. For instance, a child may make fourth-grade standing (which is as low as any child fell in any subject) in spelling and a high-school standing in language usage, or a fourth-grade standing in science and a high-school standing in arithmetical computation, or a fifth-grade standing in arithmetical computation and a high-school standing in spelling, etc. On the other hand, some individuals, such as Nos. 1, 2, and 3 at the upper end of the distribution, and Nos. 48 and 51 at the lower end of the distribution, are relatively more even in their performances. When all the facts concerning a child are known, more unusual items are often easily interpreted. For instance, No. 29, whose mental age is given as 12-2, has undoubtedly a higher mental level than this. His I.Q. on the Stanford-Binet Test has varied from 133 to 160, and the mental age here given is that corresponding to the first and lower record. Much other evidence, however, points to the fact that this record was unduly low. The boy is half French, and at the time of the first test had recently returned to this country after living for some time in France. No language difficulty was obvious in the giving of the test, but it is hardly to be doubted that the resulting score is misleading.

The oldest child in the group, No. 16, is apparently not working up to his capacity, since his mental age is much higher than that of nine or ten children who do better than he does. In his case, however, the two Stanford tests agree in giving him an I.Q. which is over 150 and under 160. His general attitude in the classroom has been characterized as 'lazy.' The youngest child chronologically, No. 28, is also next to the lowest mentally, but makes a better record than half a dozen children of higher chronological and mental age. His I.Q. is, however, 167, or possibly 175. Another child whose achievement is conspicuously above his mental level is No. 25. There is in this case no obvious explanation; classroom observation shows him consistently good, with a particular aptitude for spelling, whereas repeated intelligence tests, while giving him a slightly higher rating, do not indicate a mental ability which would account for his achievement. Individuals No. 4 and No. 12 are similar in these respects to No. 25.

Table V is a correlation table between mental and educational ages. The Pearson coefficient of correlation is + 0.80. This is attenuated by the narrow range of our group. Correction according to the Otis[2] formula, to make this comparable to a complete age group, brings the figure up to + 0.90.

Direct comparison of the intelligence quotients and the educational quotients is made in Table VI. The median I.Q. for the whole group is 152; the median educational quotient is 146. A corresponding difference is apparent when the two rooms involved are considered separately, the groups appearing in Table VII.

Accomplishment quotients have been figured in order to compare our data with those of other studies (Table VIII). The

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[2] *Jour. of Educ. Psych.*, May, 1922.

TABLE V. — CORRELATION OF STANFORD ACHIEVEMENT EDUCATIONAL AGES WITH STANFORD-BINET MENTAL AGES
(Pearson r = + 0.80)

Stanford-Binet M.A.	11^3	11^6	11^9	12^0	12^3	12^6	12^9	13^0	13^3	13^6	13^9	14^0	14^3	14^6	14^9	15^0	15^3	15^6	15^9	16^0	16^3	16^6	16^9	17^0	17^3	17^6	17^9	18^0
19-6																												
19-3																												1
19-0																												
18-9																												
18-6																												
18-3																												
18-0																												
17-9																												
17-6																												
17-3																	10						2					
17-0																												
16-9																					5							
16-6																												
												26																
16-3												27										3						
16-0												24		16			11											
15-9																		8	7									
														17														
15-6														18		13		9		6								
15-3																												
15-0										36											4							
14-9											31		15		14													
												21																
14-6											32	23	20															
14-3	52						45	39				22		19			12											
14-0											33																	
13-9							43		37	34	30	28																
13-6						46																						
							42																					
13-3					49		44																					
13-0	51				50	47			38	35		25																
12-9							41																					
12-6							40																					
12-3					48																							
12-0												29																

Standard Achievement Educational Age

TABLE VI.—DISTRIBUTION OF FIFTY-TWO GIFTED PUPILS BY INTELLIGENCE QUOTIENT AND BY EDUCATIONAL QUOTIENT

Intelligence Quotient (Stanford-Binet)	Q	Educational Quotient (Stanford Achievement)
1	190	
	185	
	180	
	175	1
26 13 10 8 2	170	2 48
48 30 3	165	3 4 8 13 30
36 27 22 20 11 9	160	9 20 25
28 24 7 5 4	155	7 22 28
52 44 33 32 23 18 17 16 6	150	5 6 10 11 12 29
42 34 31 25 21 15 12	145	23 26 32 33 34 35 36 44
51 49 47 46 45 39 35 14	140	14 15 17 18 21 27 38 42
50 43 41 40 38 37 19	135	16 19 24 31 40
29	130	37 39 41 43 46 47 49 50
	125	45
	120	51 52

Median I. Q. 152

Median E. Q. 146

TABLE VII

	I. Q.	E. Q.	A. Q.
Whole group.....	152	146	97
Room 1.........	160	155	97.5
Room 2.........	141	137	97

TABLE VIII.—DISTRIBUTION OF FIFTY-TWO GIFTED PUPILS BY ACCOMPLISHMENT QUOTIENTS (STANFORD ACHIEVEMENT TEST)

78	80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110	112	114
									47									
									44	42								
									37	34								
									32	33	41							
							49	50	23	30	14	48						
				51			39	46	21	22	9	40						
				27			18	43	15	20	7	38						
				26	45	36	17	31	5	13	6	28		12				
52				24	10	16	1	11	2	8	3	19	35	4	25			29

average accomplishment quotient is 97, and neither of the rooms varies from this more than half a point. This is slightly below the achievement quotient of an ordinary class group, but apparently a good deal higher than that of similarly gifted individuals scattered through ordinary class groups. In the study made by Miss Coy[3] in Columbus, Ohio, of children segregated in high fourth and low fifth grade, the accomplishment quotients, after work was well under way, averaged 92. Three semesters later it was 97. These children were of approximately the same chronological ages as our group, but of lower mental ages by two years (average mental age, 12.6). The intelligence quotients were correspondingly lower, approximately 128 on the average as compared with 152 in our group.

We have also the possibility, through the generosity of Dr. Terman in furnishing us with unpublished data, of comparing the achievement of our children in the reading, arithmetic, language, and spelling tests with that of the California group of gifted children. His figures are grouped by chronological ages, and our data have been correspondingly grouped for comparison. Table IX shows this. It will be seen that the subject achievement quotients of our group are higher than those of the California group, except in the case of the language usage tests of the nine- and ten-year-old children, and the reading of the ten-year-olds. The subject quotients appearing in this table are somewhat higher than our general

TABLE IX.—SUBJECT QUOTIENTS OF SPECIAL OPPORTUNITY CLASS, NEW YORK, COMPARED WITH CALIFORNIA GIFTED CHILDREN OF SAME AGES

Chron. Age	Subject Quotients							
	Reading		Arithmetic		Language Usage		Spelling	
	N. Y.	Cal.	N. Y.	Cal.	N. Y.	Cal.	N. Y.	Cal.
8–0 to 8–11	161	151	151	141	168	162	175	136
No. of cases	(6)	(68)	(6)	(70)	(6)	(66)	(6)	(68)
9–0 to 9–11	151	151	142	139	147	156	150	134
No. of cases	(29)	(92)	(29)	(91)	(29)	(91)	(29)	(92)
10–0 to 10–11	145	146	141	140	144	148	153	132
No. of cases	(16)	(114)	(16)	(114)	(16)	(112)	(16)	(113)

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[3] Coy, Genevieve. *The Interests, Abilities, and Achievements of a Special Class for Gifted Children.* Teachers College Contributions to Education, No. 131.

accomplishment quotients previously mentioned, because in this table one of the lowest tests, science and nature study, does not appear, since Dr. Terman did not have comparable material on this test.

The data reported undoubtedly raise more questions than they answer—many questions in regard to adaptation of curriculum and methods for a group of this type, questions of the relation between I.Q. and potential educational achievement, questions of motivation, questions of the reliability and validity of both educational and intelligence tests in the upper ranges of ability. The committee, in co-operation with the Institute of Educational Research of Teachers College, is attempting by further work to come nearer to answering such questions than is at present possible.

04. A COMPARISON OF SELECTED GROUPS WITH MIXED CLASSES

J. R. Benson
Principal of the Eliot School, St. Louis, Missouri

How can we provide for the employment of the full powers of all children while recognizing that natural endowments are unequally distributed? A partial solution for this problem is being worked out in the Eliot School in St. Louis.

All pupils are given the Stanford Revision of the Binet-Simon test before they complete the kindergarten course. On the basis of the results obtained we form three classes with numbers approximately equal at the time of entering the first grade. We think of these classes as bright, ordinary, and dull. The ordinary class is expected to complete the course outlined for each year without loss of time, keeping well above the minimal requirements. The class of dull pupils must be allowed more time. In a school of eight hundred pupils it is not always possible to keep the groups intact. Pupils remove and others are received. When there are too few in a class it must be combined with others.

We have been able to keep the bright children in separate classes, however, since the plan was inaugurated two years ago. Newcomers who seem possessed of the requisite qualifications are tested before being assigned to such a class. An I. Q. of 110 is desired, but we sometimes admit a pupil of lesser ability, if he does work equal to the class median in amount and kind. In chronological age we try to avoid a spread of more than six months from the median. Thus we have a homogeneous group. We plan that they shall do the required work very well. They should also finish the course prescribed for eight years in less time. Since many children plan to obtain employment at fourteen years, it is a distinct advantage if they can be graduated young enough to begin their high-school course (there is no junior high school in this neighborhood) before the law permits them to work. Our first class completed the third grade at the end of the second year.

Supplemental work offers a means of keeping the child's powers exercised. Individual assignments are used for the children who are ablest and most alert. Group projects also are found to be valuable because affording possibilities of socializing children and of provision for initiative.

Thus we have three ideals in mind in dealing with these bright children: completion of the required course in less than the allotted time; engaging the energies and interest of the child steadily and without skipping part of the course; and the accomplishment of additional work with consequent gain. It should be stated that no facilities of any kind have been provided here beyond those furnished other elementary schools. We have an ordinary school building, the usual equipment, teachers assigned for the regular work—in fact, some of the teachers are virtually beginners.

THE FIRST GIFTED GROUP

The first bright class began the first-grade work in September, 1921. In September of the present school year they were classified as in the first quarter of the fourth grade. In October tests were made in order to compare them with other pupils in the same school who have been treated differently. In Table I, the bright class (called Selected Group One) is compared with a class taught by the same teacher, in the same room, and also classified as fourth grade, first quarter.

While all members of the selected group have taken the Binet test, only part of the members of the other class have been so tested. The National Intelligence Test Scale A, Form I, was given to all in order that there might be a basis of comparison. The Thorndike-McCall Reading Scale, Form I, shows "T" scores. Buckingham's Extension of the Ayres Spelling Scale signifies the use of 103 words from Column Q. In arithmetic the Woody-McCall Mixed Fundamentals, Form I, and the Buckingham Reasoning Scale, First Division, Form I, were used.

Table I is interpreted as follows. A member of the Selected Group One having an I. Q. according to the National Test of 175 and a chronological age of 8 years and 3 months has a score of 47 on the Thorndike-McCall Reading Test, 24 on the Ayres Spelling

Scale, 41 on the Buckingham Reasoning Test, and 13 on the Woody-McCall Mixed Fundamentals. (The Binet I.Q. of each pupil of Selected Group One is not given.) The range (with the exception of one studious girl whose age makes it possible for her to keep

TABLE I.—COMPARISON OF SELECTED AND UNSELECTED GROUP

	I. Q.	Chron. Age Yr.	Mo.	Thorndike-McCall Rdg.	Ayres Spelling	Buckingham Reasoning	Woody-McCall Mixed Fund.
SELECTED GROUP ONE							
	175	8	3	47	24	41	13
	175	8	1	43	32	35	16
	159	8	6	36	2	48	14
	151	8	10	37	4	38	16
	141	8	3	45	18	33	14
	139	7	10	41	37	41	15
	137	7	10	45	64	35	13
	137	8	4	47	45	39	14
	131	9	0	37	13	27	17
	131	9	0	45	54	45	13
	131	8	8	38	20	27	10
	126	8	8	45	12	35	11
	121	8	2	34	11	36	15
	119	8	1	35	37	38	16
	116	8	2	34	10	33	10
	110	8	11	38	15	30	13
	109	8	11	43	9	33	5
	105	9	0	41	16	33	7
Median	131	8	5	41	17	35	13.5
UNSELECTED GROUP IN SAME ROOM WITH SAME SCHOOL CLASSIFICATION (FOURTH GRADE, FIRST QUARTER)							
	131	8	9	45	41	38	12
	130	8	9	40	28	48	11
	117	7	11	43	9	39	12
	117	9	8	51	35	30	12
	115	9	10	38	22	42	4
	115	9	4	36	38	38	10
	114	9	6	36	13	32	12
	114	9	10	35	16	45	9
	113	9	8	35	15	36	13
	112	9	8	49	26	41	15
	112	8	10	38	5	36	7
	109	9	8	32	3	36	6
	107	10	1	35	13	33	14
	107	9	3	43	36	36	10
	106	9	3	37	4	39	7
	102	9	1	47	14	30	8
	95	8	9	38	8	30	10
	94	10	1	43	5	36	12
	94	10	4	38	7	30	11
	93	9	9	30	4	38	10
	91	9	10	35	8	42	17
	89	9	0	38	37	33	15
	88	9	8	35	6	36	9
	87	10	7	28	12	45	7
	87	9	10	28	14	35	9
	80	10	7	35	16	42	7
	78	11	5	30	11	33	10
	75	11	5	29	5	0	7
	*	12	2	30	6	0	6
Median	106	9	8	36	13	36	10

pace with the class in spite of her score of 100) is from 104 to 137, the median of all being 115. The pupil starred in the Unselected Group made a score too low to be used. All tests were given by the principal, except the Binet, which is in the hands of the kindergarten director.

The superiority of the Selected Group is clearly shown. Only in the Buckingham Reasoning Test does the Unselected Group surpass the Selected. It is also noticeable that in general the scores in both groups bear a definite relation to the I. Q. indicated.

Table II compares the number of days the pupils of these two classes have been in school. Those in the Selected Group have a possible attendance of 400. Those exceeding this number were not in the class at the beginning, but were added as they were found to be suited to the rate of learning maintained. The last columns of this table are made up from the records of pupils in this school who are comparable to the Selected Group both in age and attendance, no account being taken of their mental ability. It will be seen that no pupil is included unless his age and attendance both fall within the limits of the group with which he is compared. Based on age and school attendance, then, it is apparent that while the members of the Selected Group have reached the fourth grade, one pupil of those listed in the last columns is still in the first, 19 are in the second, 22 are in the third, 7 are in the fourth, one in the fifth.

A SECOND GIFTED GROUP

In addition to the fourth-grade class which we have been comparing, there is a class which entered the first grade in September, 1922. This group has been depleted by transfer until at the present time it numbers but thirteen. In September of this school year it was ready for the third quarter of the second grade, having completed the assignments for a year and a half in one year's time. In Table III these pupils are compared with those of another class having the same school rating, who have been treated as individuals in the usual administrative way.

All pupils in both classes have taken the Stanford Revision of the Binet test. The I. Q. is indicated in the first column. At least one pupil of the Unselected Group will be assigned eventually to the class of bright pupils—Selected Group Two. The chronological

TABLE II.—COMPARISON OF SELECTED AND UNSELECTED GROUP IN ATTENDANCE

SELECTED GROUP ONE		UNSELECTED GROUP		FROM ENTIRE SCHOOL			
Total Days in School		Same Room			Days	Grade	Age
	486		829		380	First	8 4
	460		739		295	Second	7 10
	440		730		296	"	7 10
	394		675		385	"	8 1
	390		594		364	"	8 2
	389		584		345	"	8 2
	386		584		349	"	8 2
	383		571		392	"	8 3
	382		561		374	"	8 3
	376		554		387	"	8 3
	375		552		378	"	8 4
	366		539		361	"	8 4
	365		537		320	"	8 5
	357		531		386	"	8 5
	350		520		332	"	8 6
	330		519		385	"	8 6
	320		500		382	"	8 6
	298		500		306	"	8 7
	292		487		437	"	8 9
			480		339	"	8 10
Arith. Mean	376		479		381	Third	8 0
Median	376		477		389	"	8 1
			450		360	"	8 1
			393		365	"	8 2
			382		391	"	8 2
			378		381	"	8 3
			344		371	"	8 4
			343		363	"	8 4
			336		324	"	8 5
					343	"	8 5
		Arith. Mean	523		326	"	8 5
		Median	520		358	"	8 6
					424	"	8 6
					390	"	8 6
					376	"	8 6
					384	"	8 8
					397	"	8 9
					343	"	8 10
					381	"	8 10
					457	"	8 10
					383	"	8 10
					388	"	9 0
					382	Fourth	8 0
					479	"	8 10
					450	"	8 10
					385	"	8 10
					486	"	8 10
					476	"	8 10
					478	"	9 0
					465	Fifth	8 11
				Arith. Mean	381	Median	8 2.5
				Median	386		

age is indicated in the second column. It will be noted that the members of Selected Group Two are almost a year younger than the others. In the third column is shown the results of a test. Pressey's Second Grade Attainment Scale, Form A, was used.

It will be noted that the Unselected Group secures higher scores. We need not be surprised, however, if we make a comparison of the ages of the two groups. The difference in the time which the mem-

TABLE III.—COMPARISON OF SELECTED GROUP TWO AND AN UNSELECTED GROUP

	SELECTED GROUP TWO					UNSELECTED GROUP			
	Binet I. Q.	Age (Chron.) Yr.	Age (Chron.) Mo.	Pressey Score		Binet I. Q.	Age (Chron.) Yr.	Age (Chron.) Mo.	Pressey Score
	133	7	3	53		112	8	..	77
	128	6	11	30		111	8	3	66
	125	7	1	57		111	8	4	40
	123	7	3	54		109	8	7	37
	121	7	6	89		107	8	2	65
	115	7	1	20		107	8	6	37
	114	7	11	48		104	8	2	54
	111	8	1	39		103	8	5	54
	110	7	9	35		95	8	7	51
	104	8	1	58		90	8	6	51
	102	7	11	35		89	9	8	61
	100	7	1	85		85	9	3	37
	100	7	10	33		84	9	7	47
						82	8	3	50
Median	114	7	6	48	Median	103.5	8	5	51

bers of the contrasting groups spent in school is still more apparent from Table IV. The number of days is counted from the entry of each child in the first grade, and no account is taken of attendance in the kindergarten.

TABLE IV.—COMPARISON OF SELECTED GROUP TWO AND AN UNSELECTED GROUP IN DAYS OF ATTENDANCE*

	SELECTED GROUP TWO		UNSELECTED GROUP
	298		574
	289		387
	257		386
	196		386
	187		385
	184		382
	182		378
	178		364
	177		362
	176		345
	163		332
	152		312
	141		284
			260
Average	198	Average	367

*The members of the Selected Group having been in school but one year, only 200 days' attendance is possible for them, with the exception of three pupils who joined the class during the term.

SUMMARY

A classification is made at the beginning of each year of all pupils at the time of entry into first grade. Those having an I. Q. of 110 or more are placed in a class by themselves. Only those who fail are removed from the class, while newcomers of ability are enrolled therein, provided they are within six months of the chronological age median.

Three ideals are held in view in dealing with these gifted children: (1) completion of the elementary-school course in less than eight years; (2) the mastery of an enriched course as preferable to hurrying the pupil into classes with older children by double promotion; (3) employment of the full powers of each pupil by putting him in competition with his intellectual equals only.

The number of children involved in the project at the Eliot School will hardly warrant general statements. Certain tentative conclusions, however, may be permitted.

1. In both groups of bright children time has been saved. Each group has advanced at the rate of three grades in two years. No part of the assignments has been omitted, however.

2. Supplemental work has been completed beyond that usually done.

3. It is our conviction that pupils have worked more steadily and have found more pleasure in their occupations because of the competition with others of equal ability.

4. Tests show that the pupils who have advanced rapidly as a class have secured higher scores than older pupils having the same school seating who have spent more time in school. While the second-grade selected group fell somewhat short of the showing of the unselected group, the difference is more than accounted for by the longer time the latter have spent in school.

5. A comparison of age and attendance records shows that most Eliot School pupils comparable to the Selected Group One are to be found (without consideration of ability) in the second and third grades. Apparently a considerable portion of the Selected Group would have been so rated except for the formation of a separate class.

D. COMPARISON OF ATTAINMENTS OF GIFTED CHILDREN IN SPECIAL CLASSES WITH GIFTED CHILDREN IN ORDINARY CLASSES

D1. COMPARISON OF CLASS RATINGS OF PUPILS IN SPECIAL ADVANCED CLASSES WITH ACCELERATED PUPILS IN REGULAR CLASSES IN THE DETROIT PUBLIC SCHOOLS

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As stated elsewhere in this *Yearbook,* prior to the present system of X-Y-Z sectioning, there had been in operation at Detroit segregated classes for gifted pupils in the higher grades. The first of these Special Advanced Classes was established in 1915. Later, two more centers were established. The pupils of the first class were selected by the principals as bright, but it was soon realized that many of them were unable to do the work of the class. Accordingly, in 1917, a series of educational tests was used for the selection, but in 1918 the principals again recommended certain children because they felt the tests had not chosen their brightest pupils. At this time a Stanford-Binet examination, given by the Psychological Clinic, showed that it would have been better to have kept fifty percent of these children in the regular grades. Only thirty-eight of the seventy-seven pupils had I.Q.'s above 120. In June 1919, the practice of using group intelligence tests for selection was begun, and this was continued until September 1922, when the entire department was transferred to the intermediate school.

Recently, at the request of the Director of the Psychological Clinic, a comprehensive statistical study of the pupils in these Special Advanced classes was undertaken by the writer. Portions of this report have been referred to at other points in this volume. There will be presented here a summary of one section of the report which was made in order to determine whether the special training had carried over into the high-school work sufficiently to affect the class ratings. For this purpose, the ratings of 139 graduates from the Special Advanced Classes were compared with the ratings of 127 control pupils who had not entered the Special Advanced Classes, but who were assumed to be exceptionally bright because they had graduated from the high school before their seventeenth birthday.

The small number of cases in many of the subjects makes an adequate comparison impossible. The Special Advanced Group did better in Algebra II than the Control Group. This is probably due to the fact that the Special Group had more intensive training over a longer period of time (they were given a year of algebra before high-school entry.) The Control Group does about as well or better after the first term's work.

The Special Group also had a year of first-year Latin and began Latin II upon entry into the high school. They showed a superiority over the Control Group the first term, but it is not consistently sustained in succeeding classes. The small number of pupils in the Control Group in Latin classes, however, makes comparisons difficult. The Control Group was more often enrolled in French and German classes and the Special Advanced in Latin and Spanish classes. Possibly it would be just as well if Latin and algebra were deferred until the pupils entered the high school and the extra time be devoted to trips and observation lessons.

A general superiority was noticeable in English, however. True enrichment, apparently, was made along the lines of oral expression, reading, literature, and written compositions. Seemingly, these pupils benefited by the intensive training given them in oral expression through debates, parliamentary procedure, extemporaneous discussions, and the dramatization of plays, and in the use of references and indices; also in written expression through the writing of class yearbooks, school magazines, and book reports, and in the definite requirements for lecture notes, lesson outlines, and oral reports.

Most persons have to learn through a trial and error process how to study effectively, how to make outlines, and how to take lecture notes. It would seem worth while to teach the technique of these things to these brighter pupils and put them in possession of tools which will prove more valuable than any sets of facts available. Only a few of the group took typewriting, yet the majority of these gifted children planned a college career. It would seem wise to urge them to provide themselves with all the necessary tools to make their later work more effective. Poorly arranged and poorly written papers have probably often brought a much lower school mark than the content warranted. Typewriting, phonography, etc., would prove a help to any college student.

STUDENTS' OPINIONS REGARDING SEGREGATION

An attempt was made to compare the attitude of Special Advanced graduates with the attitude of the Control Group regarding the segregation of brighter pupils. A questionnaire was sent out. Twenty-nine former Special Advanced pupils and 72 of the Control Group returned their papers. Of the Control Group, 65 percent believed they could have done better work if the pupils of the Control Group had been divided into slow and fast divisions. Of the Special Group, 86 percent were convinced that they were benefited by segregation.

Many advantages were mentioned by the special students, which may be roughly tabulated as follows: (a) acceleration, 55 percent; (b) enrichment, 11 percent; (c) better conditions because children were of equal ability, 8 percent.

Some of the typical answers are worth quoting; "Learned more in less time;" "Learned the correct way to study;" "Learned that I had to study, and how to do it;" "Got along faster, and learned more."

The greater number were interested in "speeding up." This attitude was duplicated by 214 pupils, who were enrolled in the Special Advanced Classes when this questionnaire was being sent in by the graduates. There were 48 percent who preferred a Special Advanced Class to a regular grade because of the high-school credits they earned in algebra and Latin. The reasons given by these eleven- and twelve-year-old pupils for their preference of a special class are very interesting: "It lets the 'drags' in the regular grades hold back nobody but themselves;'' ''It brings out your mental caliber;'' ''You are not held back by pupils that cannot learn;'' ''You go into details more, it's more fun;'' ''Something else to do besides running errands for teachers.''

In the questionnaires sent to the graduates, they were asked to give, if they could, the disadvantages of attending a Special Advanced Class. Of the 29 Special students, all but five said there were no disadvantages. The other five said: ''It shortened my high-school course and resulted in complications for entering the medical school;'' ''One graduates too young and later regrets it;'' ''Separation from former classmates;'' ''Breaking away from the old bonds of friendship and becoming used to a new routine.''

Some of these criticisms are justified, in a measure. Many of the children came long distances on the car, out of their own neighborhoods, and away from their friends. They received extra credits in the Special Class. When they were graduated into the high school, they entered the one nearest their home, where they were ahead of the boys and girls with whom they used to go to school. It would seem that an arrangement which would care for these brighter pupils in their own schools would be of great advantage. It would prove less expensive to the parent, present less strain on the physical and mental health of the child, and would continue the neighborhood school friendships.

All but two of these special graduates would advise others to enter the advanced classes because then they could go faster, go more deeply into the subject, and be with pupils of equal ability. Those who would not advise others to enter a class for gifted children gave no definite reason except that ''the advantages are not as great as the disadvantages.''

It is significant that 90 percent of those in the Control Group would advise others to enter a special class for gifted children, although they themselves had never been enrolled in one. They gave as their reasons: (a) the opportunity for acceleration; (b) enrichment; (c) working with pupils of equal capacities; (d) having to work to their greatest ability.

The small percent in the Control Group who did not favor segregating according to ability thought the school work might not be done so thoroughly because of the extra subjects carried; also, that jealousy might result among the other students not entered in the class. However, from the high-school records of the Special graduates, it can be inferred that, although Latin and algebra were given beside the regular school subjects, the work must have been well done, since the Special students did so well in the high school. It is doubtful, too, if any jealousy resulted, since the tests were not given by the school but by the Psychological Clinic, and everyone had an equal chance in the competition. The effect of class rivalry is not to be compared to pupil stimulation which results when a child finds himself in a group with abilities equal to his own, where he must work as he never did before to hold a position at the head of the class.

One of the questions asked both the graduates of the Special Advanced Class and those of the Control Group was: ''In school, were you generally made to work to your greatest capacity?'' Of the Special Group 82 percent, and of the Control Group 83 percent said: ''No.'' Most of the others said: ''Sometimes;'' ''Not generally;'' ''We were urged to do our best;'' etc. They were also asked to tell in what specific grades they had to work the hardest, and the possible reason for this. Very few pupils mentioned an elementary grade. It was only in the high school that they encountered difficulties. Of course, it must be remembered that the number of special cases was so small that a comparison is of doubtful value. It seems, however, that the Special students had to work harder in the eighth grade than did the Control Group. Evidently the extra subjects of algebra and Latin account for this. In the ninth, tenth, and eleventh grades they were rather evenly matched, but in the twelfth grade, a much larger percent of the Control Group found that grade the most difficult of all.

D2. A STUDY OF THE RESULTS OF HOMOGENEOUS GROUPING OF ABILITIES IN HIGH-SCHOOL CLASSES

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One of the important problems engaging the attention of school supervisors during the past few years has been that of providing for individual differences in the ability of school children. Many attempts have been made, by modifying one phase or another of organization or method, to develop a higher degree of efficiency in dealing with the range of abilities that is found in the average school. In addition to segregating subnormal children in the elementary schools, some effort has been made, principally in the high schools, to simplify the problem of adapting instruction to the large variety of abilities, by organizing groups homogeneous with respect to ability.

The theories advanced by the advocates of this administrative device sound very plausible, but so far as we have been able to discover, no one has actually measured the results with a view to determining in a scientific manner the actual benefits derived.

It is claimed that pupils of ability above the average, if placed in separate classes, will be enabled to accomplish much more than when associated with mediocre and slow students because of greater stimulus to effort and keener competition. It is claimed, also, that under the old plan many pupils of exceptional ability have become intellectual loafers because they have never had the incentive to work up to capacity.

On the other hand, it is claimed that the child of less than average ability has not been given a fair opportunity in the intellectual race because he has been placed in competition with those who were greatly superior. The contrast has caused him to become discouraged. The pace which has been set for the class, being adjusted to the ability of the average child, has been too fast for him. Consequently, he has soon fallen hopelessly behind and has either become a drag on the class, or having become completely discouraged, has dropped out of school. If, however, he could have been placed in a class with others of about his own ability, he would have been able to keep up with the assignments, and to compete successfully with the remainder of the class. He might even have found an opportunity for intellectual leadership in his group.

These theories have all sounded very reasonable. In order to test them the writer has for the last two or three years tried separating the weaker and stronger students in those subjects having an enrollment large enough to justify such an arrangement. Some of the teachers on the faculty have reacted favorably to the plan, claiming that all groups were benefited by the arrangement. Others have been equally positive that the classified groups lost more than they gained. They insisted that there was a deadening uniformity of ability which, in the case of the stronger students took away the stimulus to leadership which they had formerly experienced; while in the case of the weaker students the lack of a spirited leadership, formerly furnished by the more brilliant ones, left the classes slow and uninteresting.

Since there is this conflict of opinions regarding the value of homogeneous groupings, this study has sought to determine by experimentation, under controlled conditions, (1) whether pupils in classes of more or less uniform ability obtain better results than those of the same ability in mixed groups, (2) if there is value in such a plan of grouping, which type of ability is most benefited, and (3) whether grouping according to ability may be of value in some subjects and not in others.

METHOD OF PROCEDURE

The experiment was conducted during the fall term of the school year 1921-22 in the Topeka High School, Topeka, Kansas. This is a high school of the cosmopolitan, four-year type, having an annual enrollment of about 1500 students. There are mid-year promotions from the elementary schools, causing a complete re-organization of classes every half year.

The subjects selected for the investigation were (1) English I, the first term's work in Freshman English; (2) English III, the first term of Sophomore English; (3) plane geometry, and (4) ancient history. These subjects were selected because they were among the few on the program that had six or more class sections each. They also offered opportunity to carry the investigation into three distinct departments, with two subjects in one of these departments, thereby permitting a comparison of two methods of classification. In each of these subjects three sections were assigned to each of two teachers, so that each teacher would have a strong section, a weak section, and a mixed section. The mixed section contained a variety of abilities. Table I shows a portion of the daily program of classes with the arrangement of classes used in this investigation.

TABLE I.—EXTRACT FROM RECITATION PROGRAM SHOWING ARRANGEMENT OF EXPERIMENTAL CLASSES

Teacher	8:45	9:50	11:00	12:05	1:45
Miss Stewart	Eng. 1 (a)	Eng. 1 (mx)			Eng. 1 (b)
Miss Bixler	Eng. 1 (b)	Eng. 1 (mx)			Eng. 1 (a)
Miss Ansel	Eng. 3 (b)	Eng. 3 (mx)			Eng. 3 (a)
Miss Tomson	Eng. 3 (a)	Eng. 3 (mx)			Eng. 3 (b)
Miss Hulse	Hist. 1 (a)	Hist. 1 (mx)	Hist. 1 (b)		
Mr. Hepworth	Hist. 1 (b)	Hist. 1 (mx)	Hist. 1 (a)		
Miss Austin		Geom. 1 (mx)	Geom. 1 (b)		Geom. 1 (a)
Miss Stewart		Geom. 1 (mx)	Geom. 1 (a)		Geom. 1 (b)

Section (a) of each subject is a strong section, Section (b) is a weak section, and Section (mx) is a mixed section containing pupils of all degrees of ability. The classes were placed on the daily program in such a manner that the strong section of one teacher came at the same period as the weak section of the other. The mixed sections of each came at the same period. The purpose of this arrangement was three-fold. First, it facilitated re-adjustment in case a pupil should have been assigned to the wrong class at the time of enrollment. Second, by having a strong and a weak class in the same period, the advantages or disadvantages of the time of day were neutralized in their effects upon results. Third, by assigning a class of each type to each of two teachers and then combining the results, different methods of teaching and differences in the ability to teach strong and weak pupils equally well were minimized. Furthermore, by having two teachers working in co-operation, the planning and scoring of tests were done together, thus overcoming in a measure personal differences in standards of testing and grading.

In placing these classes on the daily program, the mixed sections were always placed in the second period of the day, while the segregated sections were placed in the first, third, or fifth periods. The first three periods of the day are usually considered the best for student accomplishment, so at least one pair of segregated classes in each subject was placed in either the first or third, and the pair of mixed classes in the second period. The other pair of segregated classes was placed in either the third or fifth period, according to the requirements of other factors of the program. None of the classes was placed in the fourth period, as this period was a 'split' period of an hour and forty minutes, forty minutes of which was used for lunch. Half of the school went to lunch during the first forty minutes of the period, and half during the last forty minutes. This meant that the conditions of hunger and fatigue for some in that period would not be the same as for others.

Method of Classifying Pupils

The initial grouping of pupils was determined in two ways. In English 3 and in geometry all pupils who had been in the school the previous term were classified according to their grade for the previous term in the same subject or in the nearest related subject. That is, pupils in English 3 were classified on the basis of their term grades in English 2; pupils in geometry were classified according to their term grades in Algebra 2.

The school in which this investigation was conducted has a five-point grading system. The marks and their interpretations are as follows: A, excellent; B, good; C, medium; D, poor, or barely passing; NP, not passing. The faculty of the school has worked out a set of standards or definitions of grades which makes the grading standards of the different teachers in the school as nearly uniform as possible at present. Besides having a set of general standards for the whole school, each department has a set of requirements for each of the five marks, in terms of the course of study for each of the subjects in the department. This means that pupils coming together in a class of English 3, even though they may have had English 2 under several different teachers, will have been graded in English 2 on exactly the same standards.

In English 3 and in geometry, all pupils who made grades of A or B in the previous term's work, and who happened to be assigned to the period in which classes were organized on the basis of ability, were placed in Section (a). Pupils who made D or NP the previous term were placed in Section (b). Pupils who made a grade of C were assigned in equal numbers to the two sections. The question arose as to whether it would be better to organize three sections in the same period, placing the C, or medium, pupils in groups by themselves. This procedure might have created a situation somewhat more ideal in one respect for the study of the problem, but, since it seemed more desirable to have each of the co-operating teachers handle a strong section, a weak section, and a mixed section in order to facilitate assignment of pupils and to balance the factor of teaching methods, and since it was impossible to find enough subjects with nine sections on the daily program, it seemed best to proceed with the two-part division of abilities. Furthermore, it seemed reasonable to believe that, if there was any advantage to be gained by such division of abilities, this advantage would appear almost as strongly in classes containing only half the normal, or usual, spread of ability as in classes containing one-third of the distribution.

In the classes in English I and in ancient history, most of the pupils were new in the school. The English I classes consisted entirely of freshmen. Classes in ancient history consisted largely of freshmen. As it was impossible to obtain the marks in eighth-grade English and history for more than about 50 percent of these persons, it was decided to discard all attempts to classify them in advance on the basis of previous marks, and to base their classification entirely on mental test scores.

One week after the opening of the term, all pupils in the experimental classes were given the Terman Group Test of Mental Ability. This test was administered by the same person to all of the classes concerned, on the same day. He accomplished this by testing them in groups of two hundred, during three successive class periods, in a large study hall equipped with desks. Several of the co-operating teachers were present assisting in the distribution of blanks and in supervision. Pupils who were absent at the time the test was given were tested at a later date, but at the same time of the day, so that the conditions were as nearly the same as possible.

As soon as the mental tests were scored and the scores recorded on the record blanks, a careful survey was made of the results. Norms were derived for each subject and each pair of parallel classes. In the two freshman subjects in which it had been impossible to make a classification on the basis of previous grades, considerable re-adjustment had to be made. Those persons whose scores were above the middle 38 percent were placed in the (a) classes; those whose scores were below the middle 38 percent were placed in the (b) sections; those falling within the middle 38 percent were assigned about equally to the (a) and (b) sections. The middle 38 percent has been selected to represent pupils of medium ability in this division because, ideally, that quantity represents the percent of cases who should, under a normal distribution of grades in a five-point grading system with limits at 2.5 sigma, have received the medium grade.

In the classes in English 3 and in plane geometry, a few re-adjustments were made when it was found that the mental test score was high and the previous term's grade was low. This was done on the assumption that the pupil may have been a loafer with real ability, and that he needed the stimulus of contact with a class of superior ability in order to challenge his best effort. In cases where the mental test score was low and the pupil's previous grade was high, the pupil was allowed to remain in the high section, on the assumption that for some unknown reason, he may not have done justice to himself in the test. Furthermore, it seemed that positive ability in the subject, where such ability was known, ought to bear more weight than general mental ability in determining his classification. Pupils in the mixed classes were allowed to remain where assigned by chance, except in one case where it was found necessary to transfer a few from one mixed class to the other at the same hour in order better to balance the general distribution of ability in the two classes.

The mental test scores, in the cases of classes in English I and in ancient history, and the combination of mental test scores and previous grades in the cases of classes in English 3 and plane geometry, were made the bases of comparison of groups differing in ability throughout this study.

In planning this investigation, it was realized that the attitude of the teachers who conducted the experimental classes would be an important factor in determining the validity of the results, hence great care was taken in their selection. Teachers were chosen who had previously shown an interest in, and a scientific attitude toward, experimentation in their classes. Before the daily program of classes was finally arranged, each of the teachers selected for this work was called in and asked if he or she would be perfectly willing to co-operate in the investigation. All details were carefully explained. In each case a hearty response was given, indicating a real interest in the problem.

No attempt was made to formulate definite methods for conducting classes of unequal abilities. Each teacher was instructed to use such methods as he or she would ordinarily have used in dealing with pupils of unequal abilities in his classes, and to allow the strong students to cover as much supplementary material in connection with each lesson as practicable, whether in the (a) groups or the (mixed) groups. The question of methods effective with pupils of superior or inferior ability is an important one worthy of special study. It is the purpose of this study to measure merely the advantages or disadvantages that may come from selective grouping of pupils.

The attitude of the pupils toward an experiment of this kind was a factor that had to be considered. After consultation with the co-operating teachers, it was deemed wise to give as little publicity to the arrangement as possible. When the pupils were called together in large groups to take the mental tests, they were told that the office wanted a record of their general knowledge as indicated by the test questions, and that a large number of the pupils of the school were being similarly tested. The re-adjustment of pupils' classifications excited no special comment, as it has always been necessary to do some re-adjusting of classes at the beginning of each term. The pupils were not informed concerning the grouping plan in the classes to which they were assigned, and to them the tests given during the term were merely a routine part of the term's work. Thus, no pupil had occasion to feel either honored or disgraced by reason of his assignment to a group of superior or inferior ability. The general attitude of the classes was in no way affected by a feeling that they were being experimented with in order to establish records that would be used in a special way to determine administrative procedure.

METHOD OF TESTING RESULTS

In order to compare the accomplishments of pupils in the selected and mixed classes, two methods of measurement were used: (1) special tests were devised and given at intervals during the term; (2) a comparison was made of the final term grades in these subjects.

In devising the tests in each subject, the two co-operating teachers worked together. They were given a few directions by the principal regarding the methods to be used in testing and scoring. They were urged to make the tests as objective as possible so as to reduce the personal element in scoring papers. The test questions were so formulated as to cover all the supplementary material that had been studied by the strongest pupils in the six classes. It was felt that this would cause the larger accomplishments of the stronger classes to appear when compared with the weaker classes and with the accomplishment of pupils of the same ability in the mixed classes, if such contrast existed. In English 3, geometry, and ancient history three special tests were given during the term. In English I, four tests were given. In each case the same test was given to all six of the classes in that subject on the same day. The two co-operating teachers in each subject planned the tests together and scored the papers together, after having weighted each possible answer to each question.

RESULTS

The record of each pupil in each of the experimental classes thus included four items:

(1) Grade in the subject for previous term, if such was available.
(2) Mental test score from the Terman Group Test.
(3) Scores of special tests in the subject, administered at intervals during the semester.
(4) Final term grade in the subject.

The tables of records of these pupils and the tables showing comparisons of average scores cannot be included in this paper because of lack of space. There were more than 600 persons in the classes used for this investigation and 495 whose scores were actually used in establishing conclusions. The first treatment of data was the elimination of the names and scores of all persons whose records were incomplete. This procedure left 495 cases. Next, the test scores of individuals of superior, mediocre, and inferior abilities, in (a), (b), or (Mx) classes were assembled in separate tables. The scores of each test were then totaled and averaged in each of these groups and the distribution of term grades tabulated. In the two subjects, English III and plane geometry, where grades of the previous term were available, a tabulation was made (1) of the number of persons who had increased their grades over those made during the previous term, (2) the number whose grades remained the same, and (3) the number who were given lower grades. The test averages of each group of pupils, the distribution of term grades, and the record of improvement of grades constitute the data used for analysis and interpretation.

A comparison of the figures obtained from special test averages, term grades, and records of improvement, reveals the fact that pupils of superior ability did not benefit by separate grouping in geometry, for their geometry scores did not average as high as did those of pupils of the same ability in mixed classes. Pupils of inferior ability, on the other hand, seemed to benefit by their separation from bright pupils, for the scores of those in low-ability classes averaged higher than the scores of those of the same ability in mixed classes.

In English III the results obtained indicate that pupils of superior ability were able to do the work of this course equally well, whether in classes of uniform ability or in mixed classes. On the other hand, pupils of inferior ability seemed to benefit somewhat, although not to the extent that they did in geometry, by being separated from their stronger classmates. It may be that the pace set by the stronger pupils in mixed classes was too fast for those of slower mentality, and that more uniform grouping of ability gave the slower ones time to think, thus forcing them to do more of their own thinking.

A survey of the results in English I shows that they were very similar to those in English III, even though the method of classification was different—the one being based on mental tests alone, the other on both mental tests and grades of the previous term. The pupils of high ability did equally good work in either mixed or segregated groups. Those of low ability obtained slightly better results in segregated classes than in mixed classes.

In ancient history, the results of scores both in the special tests and the term grades, showed a decided advantage for pupils of high ability who were in high ability groups. On the other hand, the records show that pupils of low ability did much better work in mixed classes where they were brought in contact with brighter minds than they did in uniform groups of low ability. It is easy to believe that in a subject such as history, in which much use is made of the socialized recitation, pupils of superior ability might profit considerably by being in contact with only those of superior ability and relieved of the retardation which slower minds give to such a class. Likewise, slower minds, when separated from brighter ones, may lose a great deal of the stimulus and inspiration which the brighter ones might bring into the discussion of historical problems.

SUMMARY OF CONCLUSIONS

As a result of this experiment, we are unable to say that the grouping of high-school children according to ability secures better results than random grouping, for a comparison of the scores obtained by pupils of high ability in selected and mixed classes, and, also, a comparison of the scores of pupils of inferior abilities in the various subjects, do not all show the same tendencies.

Pupils of superior ability in geometry did better work in mixed classes than they did in selected groups. Their history scores were much higher than scores of pupils of the same ability in mixed classes. In English the differences were so small as to be negligible.

Neither can we say that separate grouping is always beneficial to the slow pupils. In this experiment slow pupils in separate groups obtained much better results in geometry, slightly better in English, but in history they were much retarded by being grouped separately.

It will be noted that in planning this experiment, no attempt was made to formulate teaching methods specially adapted to classes of high or low ability. Each teacher was instructed to use such methods as he or she would ordinarily have used in dealing with pupils of varying abilities in their classes. It was the sole purpose of this study to determine if there was any advantage to be gained from homogeneous groupings. While the mere device of grouping according to ability, from the evidence shown in this investigation, does not show strong enough or consistent enough advantages in any subject to justify the time and work which is required to classify pupils in this manner, it is quite possible that with a special method of instruction, adapted to each of these groups according to its needs, such a plan of grouping might show very positive results.[1]

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[1] The reader's attention may be called to the comments made by Professor W. S. Miller in the *Twenty-First Yearbook* of this Society, Part II, Chapter VII, pp. 205 ff., to the effect that classification of high-school pupils on the basis of mental ability makes possible an adaptation of the technique of instruction to the needs of the group, "but it does not insure it;" similarly, that it "makes possible but does not insure an adaptation of materials of instruction to the needs of the group." Preliminary results from an experiment now in progress in the high schools of Michigan suggest strongly that whether gifted pupils will profit from segregation depends very largely upon the skill of the teacher in making the adaptations of the materials and technique of instruction that the segregation permits and suggests. It may also be pointed out that the extent to which the segregation of superior pupils facilitates their school work also depends to a considerable extent upon the rigor of the selection. A group composed of the top 10 percent can accomplish decidedly more than a group composed of the top 25 percent, while a group composed of the top 50 percent of a class can by no means lay claim to represent a segregation of "gifted" pupils.—EDITOR.

D3. A STUDY OF THE EFFECTS OF CLASSIFICATION BY INTELLIGENCE TESTS

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Introduction

The purpose of this study is to compare the achievement of high-school pupils who were grouped into classes according to their standing in intelligence tests with pupils of like ability who were taught in mixed classes. The comparison was made in two subjects, algebra and Latin. Achievement was measured primarily by standardized tests, secondarily by teachers' marks.

Tests and Methods Employed

For this study the records of pupils in Algebra IA and Latin IA were used. Pupils in the mathematics department were classified into three groups by the National Intelligence Tests.[1] The Latin department segregated only the superior pupils. Pupils in each department were tested by standardized subject tests. A fuller description of the tests and the methods used follows.

The achievement tests were the Hotz Algebra Scales,[2] and the Henmon Latin Tests.[3] Three of the Hotz scales were used, namely; (1) Equations and Formula, (2) Graphs, and (3) Problems. The first of these has twelve, the second eight, and the third ten exercises.

Two tests were used from the Henmon scales—the Sentence Scale, and the Vocabulary Scale.

In the latter part of May 1921, Scale A of the National Intelligence Tests was given to the pupils in the 8th grade who were to graduate in June. These were administered by the writer in the different grade schools furnishing pupils to Proviso Township High School. Then in October, 1921, all those pupils who had come to the high school were given Scale B of the same test. The reason for giving the first test in the grade schools was to secure conditions under which the pupils would be more at ease and, hence, would do more reliable work. The reason for giving the second test was to secure a check upon the first test.

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[1] National Intelligence Tests. Haggerty, Terman, Thorndike, Whipple, and Yerkes. World Book Co., Yonkers, New York.

[2] Hotz Algebra Scales. Henry G. Hotz. Published by Teachers College, Columbia University, New York City.

[3] Henmon Latin Tests. Dr. V. A. C. Henmon, University of Wisconsin. Tests published by World Book Co., Yonkers, New York.

The Hotz Algebra Scales were given after these pupils had received nine months of instruction in first year algebra. Each teacher, following standardized directions, gave the tests to his or her own classes. In giving the Latin tests exactly the same methods of procedure were used.

METHODS OF CLASSIFICATION

The scores of the incoming freshmen were arranged in descending order and the upper and lower tertiles were found. In the case of National Scale A, all pupils having scores above 143 were classified as Group I; those below 124 were classified as Group III; and all between these scores were classified as Group II. After seven weeks, the first school report was issued. This, together with the results of Scale B of the National Intelligence Tests, was used to aid in making any shifts in classification that seemed necessary. In all departments where a sufficient number of classes could be scheduled during the same period, a classification was made in this manner. It was fairly well accomplished in mathematics, Latin, science, English, and French. However, in some of these departments classes containing non-segregated pupils necessarily had to be formed.

IS CLASSIFICATION JUSTIFIABLE AS SHOWN BY THE RESULTS SECURED?

Teachers' Opinions

In order to find an answer to this question, nine teachers who had had experience with segregated classes were asked the following questions:

1. Are you in favor of grouping pupils on the basis of mental tests?

2. Do you consider that there is a definite relation between mentality and class achievement?

3. What, in your opinion, is the greatest benefit derived from classification?

4. Which group receives the most benefit? The least?

5. Do you think the results so far obtained merit its continuance?

6. Have you any objective evidence that classification gives us the desired results?

In answer to question 1 all replied: "Yes."

As to question 2, eight of the nine thought a definite relation existed, but they qualified their statements as follows: "Yes, but not high;" "Yes, but mentality is not a guarantee of achievement."

Representative answers to question 3 are as follows: "The possibility of grading the work to meet the needs of an entire group;" "It enables a teacher to adjust her teaching to the capacity of the group."

As to the group receiving the most and the least benefit we find differences of opinion. Five consider that the highest group receives most benefit. Four consider that the lowest group receives most benefit. As to the group receiving least benefit, three say "lowest," two the "average," three "highest," and one is "undecided." A few quotations will better express their views on the point. "The minus group misses the inspiration of the recitations made by the brighter pupils, a great loss." "The pupils in the upper group will do their work successfully regardless of classification." "It should be possible to obtain the same benefits with bright pupils as with slow pupils, but it is harder to get the teachers to push them to their limit." "The bright pupils receive the most benefit, the mediocre pupils the least benefit. The former are set free to develop their power, the latter are not stimulated and remain mediocre. Whereas, mediocre pupils, if stimulated by example, may become superior." All consider classification of sufficient importance to merit its continuance.

All answered question 6 negatively.

We may summarize the replies of the teachers briefly by saying that, in the opinion of teachers, classification by mental tests is desirable; it aids both superior and inferior groups; and, even though no objective evidence is at hand, it should be continued.

OBJECTIVE EVIDENCE

The method of tabulating the data of the experiment is as follows:

1. Three groups of pupils are considered, Plus, Medium and Minus: 'Plus' means pupils ranking in the upper third of both distributions of the National Intelligence Scales; 'Minus' means those in the lower third; and 'Medium' means those in the middle third.

2. Plus, Minus, Medium, and Mixed classes are named in accord with the classification above.

3. Owing to conflicts in programs, some of the pupils in segregated classes were not in sections where they belonged. This made it possible to secure the groups mentioned in the next paragraph.

4. Plus pupils taught in various Plus classes were listed together. In the same way Medium and Minus statistical groups were formed from classes of different rankings.

5. Each of the equal ability sections had an average of 15 pupils.

6. The achievements of these sections were next compared. For this comparison pupils were tested in Latin IA and Algebra IA. Their achievements were determined by Henmon Latin Tests, Hotz Algebra Scales, and the teachers' marks.

7. The differences in achievements of selected groups in Latin and algebra are discussed separately. Then comparisons are made. The details of the results and comparisons obtained are presented in the discussions of Tables III to VIII.

Table I is made up of the averages (arithmetic means) for nine of the sections, selected as explained. From this table we see that the sections with the exception of those composed of Plus pupils from Mixed classes, and the medium pupils from Plus classes are of approximately equal intelligence. The averages of the subject tests, however, are compared in the following tables.

TABLE I.—COMPARISON OF AVERAGES MADE ON NATIONAL INTELLIGENCE SCALES, HOTZ ALGEBRA TESTS, AND TEACHERS' MARKS FOR SECTIONS IN ALGEBRA IA, WHICH HAVE BEEN TAUGHT IN PLUS, MEDIUM, MINUS OR MIXED CLASSES

SCALE	PLUS PUPILS FROM			MEDIUM PUPILS FROM				MINUS PUPILS FROM	
	Mixed Classes	Plus Classes	Minus-Medium Classes	Mixed Classes	Plus Classes	Medium Classes	Minus Classes	Mixed Classes	Minus Classes
National A	155	162	164	140	155	140	140	121	122
National B	156	156	156	138	138	139	140	124	121
Hotz Equation and Formula	8.6	9.1	8.1	6.9	8.4	7.8	6.7	5.9	6.1
Hotz Graphs	6.6	6.5	6.3	5.4	6.2	5.5	5.6	4.2	4.0
Hotz Problems	6.3	6.9	7.5	5.3	6.1	7.0	3.7	4.1	3.1
Hotz Composite	50.6	51.4	51.2	41.1	48.0	46.2	40.4	33.1	32.8
Teachers' Marks	85.0	85.6	85.5	81.9	84.0	82.4	85.0	77.9	81.4

TABLE II.—DIFFERENCES AMONG AVERAGES OF PLUS ABILITY SECTIONS TAUGHT IN PLUS, MIXED, OR MINUS CLASSES IN ALGEBRA

The first column under each heading indicates difference in units. The second shows the percentage difference

SCALE	EXCESS OF PLUS FROM PLUS OVER PLUS FROM MIXED		EXCESS OF PLUS FROM MINUS-MEDIUM OVER PLUS FROM MIXED	
	Units	Percent	Units	Percent
National A	7	4.5	9	5.8
National B	0	0	0	0
Hotz Equations and Formula	.5	5.8	−.5	−5.8
Hotz Graphs	−.1	−1.5	−.3	−4.5
Hotz Problems	.6	9.5	1.2	19.
Hotz Composite	.8	1.6	.6	1.2
Teachers' Marks	.6	.7	.5	.6

We may examine particularly the differences shown between the averages of the Hotz Composite scores. First consider only Plus sections in the light of Table II.

We find very little variation in ability between the Plus section from Plus classes and the Plus section from Mixed classes. The former exceeds the latter in every case except on Hotz Graphs. The Hotz Composite is 1.6 percent greater, and school marks only .7 percent greater. (The percentage is found by using, for the base, the lower of the two sections compared.) It will be noticed that in the different comparisons of this table that Plus pupils from Mixed classes handle the Graph test best. The Plus pupils from segregated classes in every case surpass Plus pupils from Mixed classes on the Hotz Composite. On account of the superiority of the segregated group in National A, however, we cannot attach any significance to this difference in the achievement scores.

How the various Medium sections compare can best be seen from Table III.

Each section has practically the same average intelligence except the Medium and Plus sections. The most outstanding differences

TABLE III.—DIFFERENCES AMONG AVERAGES OF MEDIUM-ABILITY SECTIONS TAUGHT IN PLUS, MEDIUM, MIXED CLASSES IN ALGEBRA IA

SCALES	EXCESS OF MEDIUM FROM PLUS OVER MEDIUM FROM MIXED		EXCESS OF MEDIUM FROM MEDIUM OVER MEDIUM FROM MIXED		EXCESS OF MEDIUM FROM MINUS OVER MEDIUM FROM MIXED	
	Units	Percent	Units	Percent	Units	Percent
National A	15	10.7	0	0	0	0
National B	0	0	1.	.7	2.0	1.5
Hotz Equations and Formula	1.5	21.7	.9	.13	–.2	–3.0
Hotz Graphs	.8	14.8	.1	1.9	.2	3.7
Hotz Problems	.8	15.1	1.7	32.	–1.6	–43.2
Hotz Composite	6.9	16.8	5.1	12.4	–.7	–1.7
Teachers' Marks	2.1	2.6	.5	.6	3.1	3.8

existing here are those between the Medium section from Mixed classes, and the Medium sections from Medium and Plus classes, respectively. For example, the average of the Medium segregated section on the Hotz Composite exceeds that of the Medium mixed section by 12.4 percent. The Medium section from Plus classes shows even a greater superiority. This may be due in part, however, to superior intelligence. In the separate tests, the medium students taught in medium classes greatly exceed all others in the Hotz Problem test. The tests seem to indicate first that pupils of medium ability do better in segregated classes of medium ability (and possibly in classes composed chiefly of pupils of high ability) than in mixed classes or in classes of prevailingly low ability. The teachers' marks indicate, as we should expect, that pupils receive higher marks when they are with pupils whose ability is in general below their own than when they are with their peers.

For comparison of Minus pupils only two sections of equal ability are available. One of them was taught in Mixed, the other in Minus classes. See Table IV.

TABLE IV.—DIFFERENCES BETWEEN AVERAGES OF MINUS-ABILITY SECTIONS, TAUGHT IN MIXED AND MINUS CLASSES IN ALGEBRA IA

Excess of Minus from Minus over Minus from Mixed	National A	National B	Hotz Equation and Formula	Hotz Graphs	Hotz Problems	Hotz Composite	Teachers' Marks
Units	2	−3	.2	−2	−1.0	−.3	3.5
Percent	1.6	−2.5	3.3	−5.0	−25.0	−.9	4.3

On two of the three algebra tests and the Composite test, the Minus from the Mixed classes excel. On the Equation and Formula tests the Minus from Segregated classes are 3.3 percent better. Teachers grade the Minus sections higher when segregated, as we should expect. The 25 percent of superiority of the section from Mixed over the section from Segregated in Problems may indicate that they gain much as to method of attacking such problems from their contact with better pupils. As a whole, these results indicate that the presence of pupils of higher ability is at least not detrimental to the slow pupils.

The investigation with pupils in Latin 1A is necessarily less extensive. Only the Plus pupils in this department were segregated. Four sections have been selected, viz; Plus from Plus classes, Plus from Mixed classes, Medium from Plus classes, and Medium from Mixed classes. A comparison of averages for these sections is given in Table V.

TABLE V.—COMPARISON OF AVERAGES MADE ON NATIONAL INTELLIGENCE SCALES, HENMON LATIN TESTS, AND TEACHERS' MARKS FOR SECTIONS IN LATIN IA, WHICH HAVE BEEN TAUGHT IN PLUS AND MIXED GROUPS

Scales	Plus Pupils from		Medium Pupils from	
	Mixed Classes	Plus Classes	Mixed Classes	Plus Classes
National A	159	156	130	129
National B	147	154	128	131
Henmon Test Vocabulary	69.9	74.6	61.2	63.6
Henmon Latin Sentences	29.3	32.5	24.0	23.3
Henmon Composite	49.6	53.7	42.6	44.0
Teachers' Marks	84.	83.5	81.5	79.5

TABLE VI.—DIFFERENCES BETWEEN PLUS PUPILS TAUGHT IN PLUS CLASSES AND PLUS PUPILS TAUGHT IN MIXED CLASSES IN LATIN IA

Excess in Plus from Plus over Plus from Mixed	National A	National B	Henmon Vocabulary	Henmon Sentences	Henmon Composite	School Marks
Excess in Units	−1	7	4.7	3.2	4.1	−.5
Excess in Percent	−.6	5	6.7	10.9	8.3	−.6

From Table VI we see that the Plus pupils from Segregated groups surpass the Plus pupils from Mixed groups except in school marks. This is as we would expect. Table VII shows that Medium pupils in Plus classes do better in the tests than Medium pupils in

Mixed classes. This agrees with the results in the algebra tests. We find, furthermore, that the Medium pupils who are in Plus classes receive lower marks than do those in Mixed classes. This agrees with our other findings and constitutes a general confirmation of the validity of our data.

TABLE VII.—DIFFERENCES BETWEEN MEDIUM PUPILS TAUGHT IN PLUS CLASSES AND MEDIUM PUPILS TAUGHT IN MIXED CLASSES IN LATIN 1A

Excess in Medium from Plus over Medium from Mixed	National A	National B	Henmon Vocabulary	Henmon Sentence	Henmon Composite	School Marks
Units	−1	3.	2.4	−.7	1.4	−2 0
Percent	−.8	2.3	3.9	2.9	3.3	−2.5

The validity of the comparisons which are made in this report rests on the assumption that pupils who make high scores in the intelligence test are capable of doing better school work and do, in general, do better work. That this assumption is correct is indicated by the comparative averages of Table VIII. These aver-

TABLE VIII.—SEGREGATED AND MIXED PUPILS COMPARED BY A STUDY OF THE EXCESS, IN PERCENTS, OF EACH ABILITY SECTION OVER NEXT LOWER FOR BOTH KINDS OF PUPILS

SCALES	EXCESS OF PLUS OVER MEDIUM FROM		EXCESS OF PLUS OVER MINUS FROM		EXCESS OF MEDIUM OVER MINUS FROM	
	Mixed	Segregated	Mixed	Segregated	Mixed	Segregated
National A	10.7	14.3	28.1	31.7	15.7	13.8
National B	13.0	12.2	25.8	29.0	11.3	14.9
Hotz Equation and Formula	24.7	16.7	45.8	49.0	17.0	27.9
Hotz Graph	22.2	18.2	57.1	62.5	28.6	37.5
Hotz Problems	18.9	−1.4	53.7	122.6	29.3	126.0
Hotz Composite	23.1	11.3	52.8	56.7	50.2	40.8
Teachers' Marks	3.8	3.9	9.0	5.2	5.1	1.2

ages indicate that the pupils who are superior in their intelligence test scores are also superior in the subject test scores, both in the Mixed and in the Segregated classes.

SUMMARY

The results of the study may be briefly summarized as follows:

1. In the algebra tests the superior pupils who were in segregated sections made about the same scores as those who were in mixed sections, but in the Latin tests the superior pupils in the superior class excelled the superior pupils in the mixed class.

2. In both subjects the medium pupils in superior or medium segregated classes excelled the medium pupils in mixed classes.

3. In algebra the medium pupils in the low segregated section made lower scores than did the medium pupils in the mixed section.

4. In algebra the poor pupils made about the same scores in the low section as in the mixed section.

5. A pupil's mark depends in a measure on whether he is with pupils who are superior or inferior to him in ability.

6. In order to judge of the value of segregation we must compare the achievements of pupils who are in segregated classes corresponding to their ability, with similar pupils in mixed classes. When we make this comparison, we find that the superior pupils and the medium pupils appear to do somewhat better in segregated than in mixed classes. The inferior pupils, however, do not appear to benefit by segregation so far as their scores on the standard tests are concerned. Whether or not they benefit in other ways the data do not indicate.

7. Finally, the data suggest that, if pupils are segregated according to ability, those, who are accidentally misplaced in higher sections than their ability warrants, may actually profit by this misplacement, but that those who are misplaced in lower sections may suffer from such misplacement.

E. STUDIES OF THE CAREERS OF ACCELERATED CHILDREN

E1. ACADEMIC RECORDS OF ACCELERATED STUDENTS

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In an address before the Stanford University Forum in 1921, Professor Terman asserted his strong faith in the advisability of early entrance to the university in case of students who have superior high-school records.[1] Other investigators have also reported that they have found under-age entrants to universities more successful than over-age entrants. The purpose of the investigation here reported was to test the case for accelerated students at the University of Wisconsin.

In this paper the term "accelerated student" means simply a student who at the age of sixteen and one-half years has qualified fully to enter the University of Wisconsin. During the four years, 1918-1921, seventy-four such students entered the College of Letters and Science of this University as regular students. The success of their academic records was determined by examining the records of the university registrar. Personal data from students still attending the university in 1923 were obtained in response to the following questionnaire:

I. Elementary School

Age at entering school.......... What grade did you enter?..........
Progress in elementary school:
  Did you ever spend two years in the same grade?..........
  Did you ever complete two or more grades in one year?..........
  Was your progress otherwise accelerated as a result of mid-year promotions, summer work, etc.? If so, how?..............................

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[1] L. M. Terman. "Intelligence tests in colleges and universities." *School and Society*, 13; 1921, 481-494, especially 493.

Advantages in elementary-school years:
  Did you live near a good school?..........
  Types of schools attended (check): Rural....; Small village school....; City school....
Special interests during elementary-school years (check):
  Athletics....; Social....; Books....; School studies....
Health during this period: Good....; Poor....
Age at completion of elementary school..........

II. High School

Age at entering high school..........
Progress in high school:
  Did you repeat any subjects?..........
  Did you complete high school in less than four years?.......... If so, how?..........
Advantages in high-school years:
  Did you live near a good high school?..........
  Type of school attended (check): Village high school....; City high school....
Special interests during high-school years (check):
  Athletics....; Social....; School studies....
Health during this period: Good....; Poor....
Age at completing high school..........

Responses to this questionnaire were made by thirty-one of the forty-one students still in residence in 1923. The following discussion of the academic careers of these students from their entrance to the elementary school until their admission to the university is based upon these responses.

RECORDS OF ACCELERATED STUDENTS IN THE ELEMENTARY SCHOOL

As shown in Table I the ages at which these accelerated students entered the elementary school range from 4 to 9. The grades first entered range from the kindergarten to Grade V. Of those who entered the kindergarten, three were 4 years of age, three were 5, one was 6, and one was 7. The child who entered the kindergarten at 6 remained there only a few months. He finished the eight grades of the elementary school at 11 years and the high school at 14.5 years. The pupil who entered the kindergarten at 7 finished the elementary

Table I.—The Elementary-School Records of Thirty-one Accelerated Students

1. Ages of accelerated students at entrance to elementary school:						
Ages in years	4	5	6	7	8	9
No. of students	3	12	11	2	1	2
Median age, 6.1; Average age, 5.7; Modal age, 5.						
2. Grade entered by accelerated students at entrance to elementary school:						
Grade entered	Kg.	1	2	3	4	5
No. of students	8	19	1	1	1	1
3. Progress in elementary school:						
No. who repeated one grade						1
No. completing more than one grade a year						29
No. who had outside help on the work						5
4. Advantages during elementary-school years:						
No. near good school						22
No. far from good school						9
Type of school: Rural, 6; Village, 3; City, 22.						
5. Special interest during this period:						
Athletics, 13; Social, 11; Books, 25; School studies, 13.						
6. Condition of health during this period:						
Good, 27; Fair, 3; Poor, 1.						
7. Age at completion of the elementary school:						
Ages		11	12	13	14	15
No. of students		9	17	5	0	0

school at 13. Of the nineteen children who entered Grade I when they began school, nine were 5 years of age, and ten were 6. The child who entered Grade II when she entered school was 7 years of age. She attended a private school, and reports that she had a great deal of individual attention. She finished the elementary school at 11. The pupil who entered Grade III was 8 years old. Two years later he entered Grade VII of Wisconsin (University) High School. The fourth-grade entrant was 9 years of age. She finished Grade VIII at 12. The pupil who entered the fifth grade was 9 years old. At 12 years she completed the eight grades of the elementary school.

From the data collected it is found that twenty-nine of these children completed more than one grade a year in certain years. Only one was ever required to repeat a grade; later, in the elementary school, he overtook his class. Two pupils who completed a grade a year were only 4 years of age when they entered school. All the students of this accelerated group completed the elementary school before they were 14 years of age. The fact that about one-third attended rural or village schools indicates that these students as a whole probably received only average academic training. One of the possible reasons for early completion of the elementary school is that their health was "good" in nearly all cases.

The remaining data of Table I are at least suggestive. These students report that as children they had the usual types of interests. Only one reported that he had no interests during his childhood. Of the thirteen who were interested in athletics, four reported special interests in school work, five in social affairs, and nine in books read outside the school. Of the eighteen students who say that they were not interested in athletics, nine were boys and nine were girls. These students report deep interests in books and school work. The types of aid received by five students outside the school consist mainly of aid given by parents. Every student who reported such aid completed more than a grade a year.

Records of Accelerated Students in the High School

High-school entrance age here refers to the age at entrance to Grade IX. Table II, which summarizes the students' reports upon their high-school work, shows that all but five entered the high school early enough to belong to this group of accelerants, even though no additional gains were made. Of the eight who entered the high school at 11 years of age, four began the elementary school at 6, three at 5, and one at 8; six finished the high school at 15

Table II.—The High-School Records of Thirty-one Accelerated Students

1. Age at entering the high school:				
Ages	11	12	13	14
No. of students	8	18	5	0
2. Progress made in high school:				
No. who spent more than four years in high school				0
No. who spent four years in high school				20
No. who spent less than four years in high school				11
3. Advantages during the high-school years:				
Near good school, 25; far from good school, 6.				
Type of school attended: Village, 7; City, 24.				
4. Special interests during high-school years:				
Athletics, 17; Social, 21; Books, 22; School Studies, 18.				
5. Health during this period:				
Good, 29; Fair, 2; Poor, 0.				
6. Age at completion of high school:				
Ages		14	15	16
No. of students		2	6	23

and two at 14. Nine boys and nine girls entered the high school at the age of 12.

Table III shows the great differences in the length of time required by different pupils to complete the elementary school. The two pupils of this group who, as already stated, began school at 4 and entered the high school at 12 finished the high school at 16. Similar variations in the entrance ages and progress of the other pupils were reported. About one-third of these students completed the high school in three years. One student reported that she had surplus credits at high-school graduation, although she did not complete the high school in less than four years; others may have done the same. Almost exactly one-fourth of the group that spent four years in the high school, and, likewise, of the group that spent less than four years in the high school, attended village high schools.

TABLE III.—THE AGES AT WHICH EIGHTEEN TWELVE-YEAR-OLD HIGH-SCHOOL PUPILS ENTERED THE ELEMENTARY SCHOOL

No. of Pupils	Ages at Entrance to the Elementary School
2	4
8	5
5	6
1	7
2	9

Eight students gained time in the high school by carrying more than the regular number of subjects, and three by attending summer sessions. The interests reported by the thirty-one students are varied: one cared for nothing but athletics; one cared only for books. The variety of interests would, if the reports are true, absolve these students from a charge of being too bookish. According to their own reports, these young men and women were physically fit during their high-school years.

RECORDS OF ACCELERATED STUDENTS IN THE UNIVERSITY

Tabular summaries of the records of accelerated students are given in Tables IV to VI. Of the twenty-eight who withdrew from the university, twelve left during the first semester after they entered; for later withdrawals reasons are assigned or not as shown

TABLE IV.—CLASSIFICATION OF ACCELERATED STUDENTS AT THE UNIVERSITY

		Percent
Number entering the university	74	
Number who graduated	5	6.8
Number who withdrew	28	37.8
Number still attending during 1922-1923	41	55.4

in Table V. The percentage of these students who withdrew with unsatisfactory grades is 10.2 as compared with 15.8 for the college of letters and science as a whole.[2] Of those who remained for only two semesters, four withdrew on account of low grades; if in addition to these, the twelve for whom no grades were recorded withdrew on account of low grades, the total would be sixteen, or 21.6 percent. During the year 1920-1921, 25.5 percent of all the freshmen withdrew from the University on account of low grades. A study reported recently in *School and Society* showed that 33.3 percent of the freshmen in thirty-two state universities did not return as sophomores.[3] Of these it was estimated that 20 percent withdrew on account of low grades. These comparisons indicate that the seventy-four accelerated students made approximately average records, so far as early eliminations due to low grades are concerned.

The sixteen students who remained a semester or more and then withdrew gained the distinctions catalogued in Table V. Of those who withdrew on account of ill health, one spent five semesters at the university, the other seven semesters. One of the students who withdrew after seven semesters was placed on probation on account of progressively lower grades for successive semesters, although her general average is 84. The relation between inferior scholarship and withdrawals is very close for this group of students. The student who withdrew on account of insufficient funds, and one of the four for whom no reason was assigned for leaving made good scholarship records. All the others have averages of poor or failure.

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[2] C. A. Smith. "Why students leave college." *Educational Administration and Supervision,* 9: 1923, 339-344.

[3] The American Association of Collegiate Registrars Proceedings. Report by H. H. Caldwell on "The mortality rate in our freshman classes." *School and Society.* May 6, 1922: 498-500.

TABLE V.—ACADEMIC RECORDS OF SIXTEEN ACCELERATED STUDENTS WHO WITHDREW FROM THE UNIVERSITY

1. Length of stay at the university:

Semester during which withdrawal occurred....	1	2	3	4	5	6	7	8
Number of students who withdrew............	0	5	3	4	2	0	2	0

2. Averages of grades of students who withdrew:

Averages of grades	No. receiving averages first semester	No. receiving general averages for all work taken
95-100..............	0	0
90- 94..............	0	0
85- 89..............	2	4
80- 84..............	3	5
75- 79..............	3	2
70- 74..............	2	0
Below 70...........	6	5

3. Reasons for withdrawals assigned in university records:

	No. of students	Average grades received first semester	Average grades for all work taken
Low grades............	9	77	71
Poor health............	2	71	62
Lack of funds.........	1	80	85
No reason given........	4	80	76

Table VI shows that unusually high percentages of these students received grades from 90 to 100. The percentages and averages of this table are based upon the numerical grades recorded by the University. This table shows also that particularly in English these students sound the depths of low marks. The average of these students in all subjects is 81.8 as compared with an average of 80.0 for all university students. At the time of obtaining these data, there

TABLE VI.—ACADEMIC STANDINGS OF SIXTY ACCELERATED STUDENTS AT THE UNIVERSITY OF WISCONSIN

Grades received	English		Mathematics		All subjects	
	Number	Percent	Number	Percent	Number	Percent
0- 39	2	3.3	0	0	0	0
40- 49	0	0	1	4.0	1	1.7
50- 59	1	1.7	0	0	2	3.3
60- 69	1	1.7	0	0	4	6.6
70- 79	7	11.7	9	36.0	6	10.0
80- 89	42	70.0	11	44.0	42	70.0
90-100	7	11.7	4	16.0	5	8.3
Median	84.5		82.5		84.0	
Average	82.5		81.4		81.8	

were no records of acceleration while at the University. There is a correlation of .53 ± .08 between the average high-school and average university grades of these students. Of the ten students with the lowest high-school marks of this group, over half made university grades of poor or failure; of the ten with the highest high-school marks, all made university grades of good or excellent.

INDIVIDUAL RECORDS OF ACCELERATED STUDENTS

In order to show in greater detail the school histories of accelerated students, individual accounts of a representative sampling of them are given here. These accounts indicate that accelerants may be excellent, good, or fair. No accounts of the students who are very poor are available because such students left school before the questionnaire was sent.

Student 4 began school at the age of 6. He entered the first grade, finished the elementary school at 11, and the high school at 14. His high-school record was excellent. His university record in chemistry is excellent;[4] French and history good; English, economics, and philosophy fair; and mathematics poor. His general average is fair. He reports good health and abiding interests in reading, social affairs, and school work. He has attended only city schools.

Student 7 entered the kindergarten at 4 and made normal progress thereafter. His record is fair in chemistry, English, and Spanish; poor in history and economics; and incomplete in political science. He disclaims an interest in anything except athletics. His health has always been good, and he has attended only city schools.

Student 11 entered the first grade at 5 years of age, completed the elementary school at 12, and the high school at 16. Her university record is as follows: Spanish, French, botany, and philosophy, excellent; English, education, political science, and geology, good. Her average is excellent. She attended a rural elementary school and a small village high school. Her health has always been excellent and her interests are diversified.

Student 15 entered the kindergarten at 4, finished the elementary school at 11, and the high school at 15. In the university she made a record of excellent in English, physics, economics, chemistry, and anatomy; a record of good in French, mathematics, and zoology; and fair in philosophy. This student, of excellent physical condition, has always attended strong city schools. Her interests are athletics, social affairs, and books.

Student 19 entered the kindergarten at 6, completed the elementary school at 11, and the high school at 14. At the university he has the following records: good in English, chemistry, history, and Latin; fair in geology, French, economics, mathematics, and philosophy. He appears to be normal in interests and health. He is a city school product.

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[4] At the University of Wisconsin, excellent signifies a grade of 93-100; good, 85-92; fair, 77-84; poor, 70-76; and failure below 70.

Student 23 entered school at 6, and finished the high school at 15. His university record is nearly excellent. His chief interest is, and has been, school work. His health is excellent. He has attended only city schools.

Student 24 entered the third grade at 8, and finished the high school at 16. Her university record is a very little below excellent. Books and school work are her chief interests. She is only ''slightly'' interested in social affairs and athletics. Her health is excellent. She is a product of city schools.

Student 29 entered the kindergarten at 4, made normal progress in the elementary school, and took his high-school course in three years. His university average is low in the ''fairs'': good in English, physical education, and military drill; fair in geology and history; and poor in Spanish and mathematics. Although he reports that he has always been interested in social affairs, athletics, and books, he has never cared much for school studies. His health has always been good. He has always lived in a city and attended city schools.

Conclusions

Several types of acceleration have been found: early entrance, skipping of grades, and carrying of more than the regular amount of school work in the high school. No students attended schools which provide any form of the 'multiple track' system for pupils of different abilities. Special aid in the form of pre-school training, parental aid, or summer school sessions was given to a few of the accelerants.

It was impossible to obtain accurate records of the social life of these students while in the high school or the University. It seems, however, from the available information that they entered into as many social activities as the average student. In fact, the entire records of these students indicate that they are nearly, if not quite, normal in everything except pedagogical age.

In spite of the disruption of work caused by skipping grades or otherwise completing more than a grade a year, all of these students were academically successful until after high-school graduation. Great advantages might have accrued had proper guidance been administered, for it is clear that certain of these students were only accelerated and were not precocious. The records made in the university by these accelerants corroborate Terman's assertion which was referred to at the beginning of this paper. Of the students who presented superior high-school records, all made either good or excellent records at the university. Of the students who presented mediocre or poor high-school records, several were advised by the registrar at the time of entrance to the university further to fortify themselves by an additional year of high-school work. Their university records show the wisdom of the advice.

More careful selection of students for acceleration would reduce, if not eliminate such academic failures as have been cited in this paper. So far as academic work is concerned, teachers and parents could safely advise certain students to finish school in less than normal time, but, at the present time, teachers and parents do not effectively guide children in this respect. At present, accelerants are likely to have gained time because of the ambition of teachers or parents as well as because of superior capacities. As a consequence, the academic records indicate that in both the high school and the university, some accelerants are brilliant while others are only mediocre.

E2. A STUDY OF THE SUBSEQUENT STANDING OF SPECIALLY PROMOTED PUPILS

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Introduction

As used in this study, 'special promotion' means the skipping of a half-grade of the elementary school course. It has been the custom in this city for the past ten years to recommend to the superintendent for special promotion such pupils as the classroom teacher and the principal felt could carry the work of the next higher half-grade.

As the question of locating possible candidates was left entirely to the classroom teacher and the principal, there was naturally considerable flexibility in the exercise of this privilege—in some buildings comparatively large numbers were recommended for special promotion, while in others there was practically none.

As just stated, the teacher's judgment was the basis upon which the special promotion was recommended. Intelligence tests were not used as the basis. Mental test data for the pupils in this study were obtained for the purpose of this study after the special promotions took place.

It was for the purpose of making a thorough systematic check on the progress of pupils specially promoted during this ten-year period that this study was made. The research department was desirous of knowing whether the success of the pupils warranted having the practice of grade-skipping continued. Progress in school subjects, as shown by a critical examination of their subsequent records, is taken as the criterion of success.

The records show 884 cases of special promotion during the period from 1912-13 to the end of the first semester 1922-23. Of these only such cases could be used in this study as remained in the city during several semesters after they had been specially promoted. Consequently, the selection was made by taking in order the first one hundred cases that were still in the Long Beach schools at the end of the first semester 1922-23, and for which complete scholastic records were available.

The following information was secured from the term records for each of the one hundred pupils studied: (1) the scholastic record of the pupil for the semester preceding special promotion; (2) the half-grade skipped; (3) the scholastic record in all subjects for each semester from the time of special promotion to the end of the first semester 1922-23.

An individual case record-sheet containing this information, together with the intelligence rating of each pupil, was prepared. The following sample shows the content and arrangement of the data in each of the individual case records:

CASE No. 22 I. Q. 136	Citiz.	Read.	Spell.	Lang. or Gram.	Arith.	Geog.	Hist.	Writing	Hygiene	Drawing	Music	Home Ec.
1A—2A	1	1	1	1								
Skipped 2B												
2A—3B	1	1	1	1								
3B—3A	1	1	1	1	1	–	–	2	–	2	3	
3A—4A	–	1	1	1	2	1	–	2	–	2	2	
Skipped 4B												
4A—5B	1	1	1	1	1	1	–	2	1	1	1	
5B—5A	1	2	2	2	2	2	2	2	–	2	2	2
5A—6B	1	2	2	2	2	3	2	3	2	2	2	2
6B—6A	2	2	2	3	2	2	2	3	3	3	–	–

Notation:

1. I.Q. 136.
2. 2B and 4B are the half-grades skipped.
3. Grades lower first semester after special promotion; none.
4. Grades same or higher first semester after; citizenship, reading, spelling, language.
5. Grades lower second semester after; none.
6. Grades same or higher second semester after; citizenship, reading, spelling, language.
7. Average of preceding grades same as average of first semester following.
8. Average of preceding grades higher than average of second semester following.

INTERPRETATION OF THE DATA APPEARING IN THE INDIVIDUAL CASE RECORDS

From the facts to be found in the individual case records, an attempt has been made to determine the degree of reliability which can be placed on certain factors as indications of ability to skip a grade without subsequent injury to the student's scholastic record. These factors are: the I.Q. of the pupil, his scholastic record in a particular subject, the average of his term marks[1] in three subjects, and the particular grade skipped. First, we wish to know whether the I.Q. alone, without reference to accomplishment, is a fair basis upon which to make our 'special promotions.' The I.Q. as a basis of prediction will be studied for these subjects: citizenship, reading, arithmetic, spelling, and writing.

A. Citizenship

Table I shows this with reference to the subject of citizenship for the first semester.

TABLE I.—SHOWING THE EFFECT OF SPECIAL PROMOTION AS SEEN IN THE QUALITY OF WORK DONE IN CITIZENSHIP THE FIRST SEMESTER FOLLOWING

FOR INDIVIDUALS IN:	QUALITY OF WORK					
	Lower		Same		Same or Higher	
	No.	Percent	No.	Percent	No.	Percent
Group I—I. Q. up to 110. (Average Intell.)........	8	22	24	67	28	78
Group II—I. Q. 110–120. (Superior Intell.)........	2	8.7	19	82.6	21	91.3
Group III—I. Q. over 120. (Very Super. Intell.).....	5	18	22	78.5	23	82

Using intelligence scores (I.Q.'s) as a basis of predicting success in citizenship after special promotion, the data show that, for pupils of normal intelligence, the chances are 78 to 22 (4:1) that the pupil will succeed as well or better in the first semester following such promotion. For those of superior intelligence the chances are 91.3 to 8.7 (10:1)[2] that they will succeed as well or better. For those of very superior intelligence the chances are 82 to 18 (5:1).

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[1] The expression *"term marks"* is used in speaking of the marks given in a school subject at the end of a semester.

[2] For convenience nearest units are used.

It appears that were the I.Q. to be used as a basis of special promotion in citizenship, success in securing the same or higher marks would be attained in 78 out of 100 cases for pupils of average intelligence; 91.3 out of 100 cases for pupils of superior intelligence; and 82 out of 100 cases for pupils of very superior intelligence.[3]

For the second semester after special promotion the results are slightly different, as shown in Table II.

TABLE II.—SHOWING THE EFFECT OF SPECIAL PROMOTION AS SEEN IN THE QUALITY OF WORK DONE IN CITIZENSHIP THE SECOND SEMESTER FOLLOWING

FOR INDIVIDUALS IN:	QUALITY OF WORK					
	Lower		Same		Same or Higher	
	No.	Percent	No.	Percent	No.	Percent
Group I—I. Q. up to 110...	7	21	23	70	26	79
Group II—I. Q. 110–120...	5	29.5	11	64.5	12	70.5
Group III—I. Q. over 120..	3	10.5	24	86	25	89.5

For the second semester after special promotion, the data show that for pupils of normal intelligence the chances of equal success in citizenship are 79 to 21 (4:1); for superior pupils the chances are 70.5 to 29.5 (2:1); for very superior pupils the chances are 89.5 to 10.5 (9:1). It seems that in the second semester the chances of success equal to that had preceding promotion for the superior pupils are only about 2:1 as against 4:1 the first semester. For very superior pupils, however, the chances have increased from 4:1 the first semester to 9:1 the second semester.

There can be no question, then, that for pupils of very superior intelligence, skipping a half-grade may safely be resorted to as far as the subsequent citizenship record is concerned.

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[3] It should be noted that, in order to determine whether a pupil's work falls off or not, the quantity which should be compared with the percentage of work which is the "same or higher" is the sum of the percentages of work which is the "same" and "lower." If these two quantities balance, the pupil has maintained his average. We cannot judge merely from a comparison of the percentage of "same or higher" with the percentage of "lower" whether the average grade has remained the same, risen, or fallen. The author uses this comparison to determine whether one I.Q. group behaves differently from the others. For this purpose it is satisfactory.—F. N. F.

B. Reading

The reliability of the intelligence quotient as a basis for predicting subsequent success in reading is shown in Tables III and IV.

Using intelligence as a basis of predicting success in reading following special promotion, the data show that during the first semester, for pupils of average intelligence, the chances are 51.5 to 48.5 (1.1:1) that they will succeed as well or better; for pupils of superior intelligence the chances are 83.5 to 16.5 (5:1) that they will succeed as well or better; for pupils of very superior intelligence the chances are 90.3 to 9.7 (10:1).

Table III.—Showing the Effect of Special Promotion as Seen in the Quality of Work Done in Reading the First Semester Following

For Individuals in:	Quality of Work					
	Lower		Same		Same or Higher	
	No.	Percent	No.	Percent	No.	Percent
Group I—I. Q. up to 110...	18	48.5	18	48.5	19	51.5
Group II—I. Q. 110–120...	5	16.5	22	73.5	25	83.5
Group III—I. Q. over 120..	3	9.7	26	84	28	90.3

It is practically certain from this that promotion will result in continued success in reading for superior children, while for average children the policy of skipping grades seems to be doubtful.

Table IV shows similar results for the second semester after special promotion.

Table IV.—Showing the Effect of Special Promotion as Seen in the Quality of Work Done in Reading the Second Semester Following

For Individuals in:	Quality of Work					
	Lower		Same		Same or Higher	
	No.	Percent	No.	Percent	No.	Percent
Group I—I. Q. up to 110...	16	45.5	16	45.5	19	54.5
Group II—I. Q. 110–120...	5	18	17	60.5	23	82
Group III—I. Q. over 120..	2	6.5	27	87	29	93.5

It appears that, were the I.Q. to be used as a basis of special promotion in reading, success in securing the same or higher grades would be attained in 54.5 out of 100 cases for pupils of average intelligence; 82 out of 100 cases for pupils of superior intelligence; and 93.5 out of 100 cases for pupils of very superior intelligence.

Therefore, in reading, skipping of grades may safely be practiced without danger of lowering the scholastic records of superior pupils, but it is not to be recommended for pupils of average ability.

C. Arithmetic

The predictive value of the I.Q. with regard to subsequent success in arithmetic is brought out in Tables V and VI. It will be seen in Table V that for pupils of normal intelligence, there is less than an even chance (47:53) of doing equally well in arithmetic during the first semester after special promotion. For pupils of superior intelligence the chances are 66.7 to 33.3 (2:1) that they will do as well in arithmetic the first semester after special promotion. For very superior pupils the chances of equal success are 56 to 44 (1.3:1).

TABLE V.—SHOWING THE EFFECT OF SPECIAL PROMOTION AS SEEN IN THE QUALITY OF WORK DONE IN ARITHMETIC THE FIRST SEMESTER FOLLOWING

FOR INDIVIDUALS IN:	QUALITY OF WORK					
	Lower		Same		Same or Higher	
	No.	Percent	No.	Percent	No.	Percent
Group I—I. Q. up to 110...	18	53	12	35.2	16	47
Group II—I. Q. 110–120...	8	33.3	12	50	16	66.7
Group III—I. Q. over 120..	11	44	11	44	14	56

There seems to be a noticeable handicap in arithmetic the first semester following for those of average intelligence who are specially promoted. According to Table VI, however, this handicap is largely overcome by the end of the second semester.

TABLE VI.—SHOWING THE EFFECT OF SPECIAL PROMOTION AS SEEN IN THE QUALITY OF WORK DONE IN ARITHMETIC THE SECOND SEMESTER FOLLOWING

FOR INDIVIDUALS IN:	QUALITY OF WORK					
	Lower		Same		Same or Higher	
	No.	Percent	No.	Percent	No.	Percent
Group I—I. Q. up to 110...	10	31.2	20	62.5	22	68.8
Group II—I. Q. 110–120...	8	35	7	30	15	65
Group III—I. Q. over 120..	10	40	13	52	15	60

In the second semester, as revealed by Table VI, the chances of equal success in arithmetic are 68.8 to 31 (2:1) for pupils of average intelligence. For superior pupils the chances are 65 to 35 (2:1) that they will do equally well. For very superior pupils the chances of equal success in arithmetic are 60 to 40 (1.5:1).

Whereas in reading, superior pupils continue to do superior work after skipping a half-grade, in arithmetic the practice would seem to be questionable.

D. Spelling

Table VII shows the degree of success attained in spelling during the first semester after special promotion by pupils in each of the three common groups on the basis of intelligence.

TABLE VII.—SHOWING THE EFFECT OF SPECIAL PROMOTION AS SEEN IN THE QUALITY OF WORK DONE IN SPELLING THE FIRST SEMESTER FOLLOWING

FOR INDIVIDUALS IN:	QUALITY OF WORK					
	Lower		Same		Same or Higher	
	No.	Percent	No.	Percent	No.	Percent
Group I—I. Q. up to 110...	13	34	24	63	25	66
Group II—I. Q. 110–120...	6	21.5	19	68	22	78.5
Group III—I. Q. over 120..	3	10	26	86.7	27	90

Using intelligence scores as a basis of prediction of success in spelling for those who receive special promotion, the data show that for the first semester following special promotion the chances for doing as well or better are 66 to 34 (2:1) for pupils of average intelligence; 78.5 to 21.5 (4:1) for pupils of superior intelligence; 90 to 10 (9:1) for pupils of very superior intelligence.

Pupils of average ability, then, cannot skip a half-grade without danger of reducing the quality of work in spelling.

As seen in Table VIII, the reliability of the I.Q. as a basis for prediction of success in spelling for the second semester coincides very closely with the results for the first semester. It will be noted that for pupils of superior intelligence 96.4 percent do as well or better the second semester, as against 90 percent the first semester.

TABLE VIII.—SHOWING THE EFFECT OF SPECIAL PROMOTION AS SEEN IN THE QUALITY OF WORK DONE IN SPELLING THE SECOND SEMESTER FOLLOWING

FOR INDIVIDUALS IN:	QUALITY OF WORK					
	Lower		Same		Same or Higher	
	No.	Percent	No.	Percent	No.	Percent
Group I—I. Q. up to 110...	13	35	23	62	24	65
Group II—I. Q. 110–120...	8	27.7	17	58.5	21	72.3
Group III—I. Q. over 120..	1	3.6	24	89	26	96.4

From the data it appears that were the I.Q., rather than accomplishment, to be used as a basis for promotion in spelling, success in securing the same or higher marks the second semester would be attained in 65 out of 100 cases for pupils of average intelligence; 72.3 out of 100 cases for pupils of superior intelligence; 96.4 out of 100 cases for pupils of very superior intelligence.

For pupils of superior intelligence, then, skipping a half-grade does not noticeably affect their subsequent ability to do satisfactory work in spelling.

E. Writing

In similar manner an attempt has been made to determine whether the I.Q. alone is a reliable basis for prediction of success in writing after special promotion.

TABLE IX.—SHOWING THE EFFECT OF SPECIAL PROMOTION AS SEEN IN THE QUALITY OF WORK DONE IN WRITING THE FIRST SEMESTER FOLLOWING

FOR INDIVIDUALS IN:	QUALITY OF WORK					
	Lower		Same		Same or Higher	
	No.	Percent	No.	Percent	No.	Percent
Group I—I. Q. up to 110...	9	32	15	53.5	19	68
Group II—I. Q. 110–120...	8	40	7	35	12	60
Group III—I. Q. over 120..	6	27.2	9	41	16	72.8

Table IX indicates that for pupils of average intelligence the chances of doing as well or better in writing the first semester after special promotion are 68 to 32 (2:1); for pupils of superior intelligence the chances of doing equally well are 60 to 40 (1.5:1); for very superior pupils the chances are 72.8 to 27.2 (2.6:1).

Comparing with the results shown in Table X, we notice that in the second semester only 60.7 percent of those of average intelligence have an equal chance, as against 68 percent the first semester. For those of superior intelligence, there is a 10 percent increase over the first semester of those who are likely to succeed equally well. The very superior group, on the other hand, shows only 60 percent attaining an equal degree of success, as against 72.8 the first semester.

TABLE X.—SHOWING THE EFFECT OF SPECIAL PROMOTION AS SEEN IN THE QUALITY OF WORK DONE IN WRITING THE SECOND SEMESTER FOLLOWING

FOR INDIVIDUALS IN:	QUALITY OF WORK					
	Lower		Same		Same or Higher	
	No.	Percent	No.	Percent	No.	Percent
Group I—I. Q. up to 110...	11	39.3	14	50	17	60.7
Group II—I. Q. 110–120...	6	28.7	8	38.1	15	71.3
Group III—I. Q. over 120..	8	40	9	45	12	60

It appears that, were the I.Q. used as the basis for promotion, success in securing the same or higher marks in writing the second semester would be attained in 60.7 out of 100 cases for pupils of average intelligence; 71.3 out of 100 cases for pupils of superior intelligence; 60 out of 100 cases for pupils of very superior intelligence.

In writing there seems to be a general falling off in the quality of work done after skipping. This may be due to lack of physical development, or motor co-ordination. Whatever the cause, it is so serious that the effects are not overcome by the end of the second semester following the special promotion. Persons having to do with special promotions should not fail to take this into consideration.

SUCCESS IN THREE SUBJECTS—LANGUAGE, READING, AND ARITHMETIC—AS AN INDICATION OF PROBABLE SUCCESS IN THESE SUBJECTS FOLLOWING SPECIAL PROMOTION

In the preceding tables an effort was made to determine how reliable is the one factor, I.Q., as a basis of special promotion.

Other factors are considered in the remaining tables. In Table XI a comparison is made between the average of the term marks in the three subjects—reading, language, and arithmetic—before and after special promotion.

TABLE XI.—SHOWING THE AVERAGE OF TERM MARKS IN READING, LANGUAGE, AND ARITHMETIC BEFORE SPECIAL PROMOTION, COMPARED WITH THE AVERAGE IN THE SAME SUBJECTS THE FIRST AND SECOND SEMESTERS FOLLOWING

	QUALITY OF WORK					
	Lower		Same		Same or Higher	
	No.	Percent	No.	Percent	No.	Percent
First Semester after Special Promotion	54	54	36	36	46	46
Second Semester after Special Promotion	39	39	46	46	61	61

Using the average of the marks in three subjects—reading, language, and arithmetic—as a basis for special promotion, the data show that for the first semester there is less than an even chance of securing as high an average in the three subjects as before special promotion. In the second semester this handicap seems to have been partially overcome and the chances are 61 to 39 (1.5:1) that the average in the three subjects will be as high or higher than it was before special promotion.

The average of the term marks in several fundamental subjects, then, would not alone seem to be a safe basis upon which to recommend skipping a grade.

TERM MARKS MADE IN A GIVEN SEMESTER IN ANY SUBJECT AS A BASIS FOR PREDICTING PROBABLE SUCCESS IN THAT SUBJECT AFTER SPECIAL PROMOTION

Is the term mark a pupil receives in a given subject a reliable indication that he will do as well or better after special promotion? Tables XII, XIII, XIV, and XV are designed to answer this question.

Using the term mark made during a given semester in arithmetic as a basis for predicting probable success in that subject after

A. Arithmetic

Table XII.—Showing the Effect of Special Promotion as Seen in the Quality of Work Done in Arithmetic the First Semester Following

For Those Receiving:	Quality of Work					
	Lower		Same		Same or Higher	
	No.	Percent	No.	Percent	No.	Percent
Term Mark—1	19	51.3	18	48.7	18	48.7
Term Mark—2	11	30.6	15	41.6	25	69.4
Term Mark—3	2	50	1	25	2	50

special promotion, Table XII shows that for those having previously made a term mark of "1" the chances are 48.7 to 51.3 (1:1.1) that they will do as well following special promotion. For those having previously made a term mark of "2" the chances of equal success following special promotion are 69.4 to 31.6 (2.2:1). For those having previously made a term mark of "3" the chances of equal success are 50 to 50 (or 1:1).

It would seem that the scholastic attainment in arithmetic during a given semester can not be taken as a safe prediction that the same quality of work will be done after special promotion.

For the second semester following special promotion the results are quite similar, as shown in Table XIII. According to this table, those having made a term mark of "1" before special promotion have an even smaller chance of doing equally well the second semester than they had the first.

The data show that a term mark of "1" is not a safe prediction that a pupil will do as well the first or second semester after special promotion. For those who previously received a term

Table XIII.—Showing the Effect of Special Promotion as Seen in the Quality of Work Done in Arithmetic the Second Semester Following

For Those Receiving:	Quality of Work					
	Lower		Same		Same or Higher	
	No.	Percent	No.	Percent	No.	Percent
Term Mark—1	25	65.8	13	34.2	13	34.2
Term Mark—2	11	29	22	57.8	27	71
Term Mark—3	2	50	0	0	2	50

mark of "2," there is a chance of 3 out of 4 that they will do as well following special promotion. There is a chance of 1 out of 2 that those promoted on term marks of "3" will keep up to that standard of work.

There is small likelihood that those skipping a half grade on a mark of "1" in arithmetic will be doing the same quality of work in that subject two semesters later.

B. Language

In language the marks made during a given semester seem to be a more reliable basis for predicting that the pupil will do as well or better after special promotion. Table XIV shows that, for those previously receiving "1" in this subject, 64.5 percent do as well or better the first semester after special promotion. Of those who had previously done "2" quality of work, 66.7 percent maintain this standard the first semester after special promotion.

TABLE XIV.—SHOWING THE EFFECT OF SPECIAL PROMOTION AS SEEN IN THE QUALITY OF WORK DONE IN LANGUAGE THE FIRST SEMESTER FOLLOWING

FOR THOSE RECEIVING:	QUALITY OF WORK					
	Lower		Same		Same or Higher	
	No.	Percent	No.	Percent	No.	Percent
Term Mark—1	22	35.5	40	64.5	40	64.5
Term Mark—2	10	33.3	15	50	20	66.7
Term Mark—3	0	0	5	83.3	6	100

As is the case in arithmetic, there is smaller likelihood that those doing superior work preceding the skip will maintain their previous standard than there is for those doing average work.

For the second semester after special promotion the number maintaining their previous standards is larger, being 69 as against 64.5 out of 100 the first semester for the "1" group, and 87.5 as against 66.7 out of 100 for the "2" group.

Table XV shows that, using the marks made the previous semester in language as a basis of predicting success in that subject the second semester after special promotion, the chances are 69 to 31 (2.2:1) for those having term marks of "1"; 87.5 to 12.5

(7:1) for those having term marks of "2"; and 83.3 to 16.7 (5:1) for those having term marks of "3."

TABLE XV.—SHOWING THE EFFECT OF SPECIAL PROMOTION AS SEEN IN THE QUALITY OF WORK DONE IN LANGUAGE THE SECOND SEMESTER FOLLOWING

FOR THOSE RECEIVING:	QUALITY OF WORK					
	Lower		Same		Same or Higher	
	No.	Percent	No.	Percent	No.	Percent
Term Mark—1	18	31	40	69	40	69
Term Mark—2	4	12.5	21	65.5	28	87.5
Term Mark—3	1	16.7	2	33.3	5	83.3

Standards of ability in language before special promotion are more nearly maintained by the superior group than by either the average or the very superior group.

EFFECT OF SKIPPING A PARTICULAR HALF-GRADE

In the study of special promotions, the question quite naturally arises as to whether there is any noticeable difference in the subsequent progress of the pupil, depending on the particular half-grade skipped. That is, does skipping the second or third grade show as marked an effect upon the subsequent school progress as does skipping the fourth or fifth grade or vice versa.

A. Citizenship

This question is answered by Tables XVI and XVII with regard to citizenship, by Tables XVIII and XIX with regard to reading, and by Tables XX and XXI with regard to arithmetic.

TABLE XVI.—SHOWING THE EFFECT OF SPECIAL PROMOTION AS SEEN IN THE QUALITY OF WORK DONE IN CITIZENSHIP THE FIRST SEMESTER FOLLOWING

OF THOSE WHO SKIPPED:	QUALITY OF WORK					
	Lower		Same		Same or Higher	
	No.	Percent	No.	Percent	No.	Percent
2B or 2A	1	7.7	12	92.3	12	92.3
3B or 3A	2	16.7	9	75	10	83.3
4B or 4A	2	11.7	13	76.6	15	88.3
5B or 5A	5	26.3	12	63.2	14	73.7
6B or 6A	2	14.4	8	57	12	85.6

The data show that of those who skip 2B or 2A, 92.3 out of 100 do as well or better in citizenship than they did before skipping. Of those who skip 3B or 3A, 83.3 out of 100 do as well or better than they did before. Of those who skip 4B or 4A, 88.3 out of 100 do as well or better. Of those who skip 5B or 5A, 73.3 out of 100 do as well or better. Of those who skip 6B or 6A, 85.6 out of 100 do as well or better the first semester following the skip. The facts would seem to show that skipping 5B or 5A has a more harmful effect on the citizenship record than skipping any other half grade.

TABLE XVII.—SHOWING THE EFFECT OF SPECIAL PROMOTION AS SEEN IN THE QUALITY OF WORK DONE IN CITIZENSHIP THE SECOND SEMESTER FOLLOWING

OF THOSE WHO SKIPPED:	QUALITY OF WORK					
	Lower		Same		Same or Higher	
	No.	Percent	No.	Percent	No.	Percent
2B or 2A	1	7.7	12	92.3	12	92.3
3B or 3A		16.7	7	58.3	10	83.3
4B or 4A	4	25	12	75	12	75
5B or 5A	3	20	12	80	12	80
6B or 6A	5	41.7	5	41.7	7	58.3

The striking fact of this table is that of those who skipped 6B or 6A, only 58.3 percent are doing as well or better in citizenship. According to these tables, then, persons dealing with special promotions should give serious consideration to the citizenship situation at this point.

B. Reading

Tables XVIII and XIX seem to show that there is less injury to a pupil's subsequent record in reading, if he skips 2B or 2A, than if he skips any other grade.

According to Table XVIII, 94.1 percent of those who skip 2B or 2A do as well or better in reading the first semester after special promotion. Of those who skip 3B or 3A, 60 percent do as well or better in reading the first semester after special promotion. Of those who skip 4B or 4A, 79 percent do as well or better after special promotion. Of those who skip 5B or 5A, 70 percent

TABLE XVIII.—SHOWING THE EFFECT OF SPECIAL PROMOTION AS SEEN IN THE QUALITY OF WORK DONE IN READING THE FIRST SEMESTER FOLLOWING

OF THOSE WHO SKIPPED:	QUALITY OF WORK					
	Lower		Same		Same or Higher	
	No.	Percent	No.	Percent	No.	Percent
2B or 2A	1	5.9	16	94.1	16	94.1
3B or 3A	6	40	8	53.3	9	60
4B or 4A	4	21	14	73.7	15	79
5B or 5A	6	30	12	60	14	70
6B or 6A	7	38.9	9	50	11	61.1

do as well or better the following semester. Of those who skip 6B or 6A, 61.1 percent do as well or better the first semester after special promotion.

It seems that skipping 6B or 6A is more harmful to subsequent reading progress than skipping any earlier grade, with the exception of 3B or 3A.

TABLE XIX.—SHOWING THE EFFECT OF SPECIAL PROMOTION AS SEEN IN THE QUALITY OF WORK DONE IN READING THE SECOND SEMESTER FOLLOWING

OF THOSE WHO SKIPPED:	QUALITY OF WORK					
	Lower		Same		Same or Higher	
	No.	Percent	No.	Percent	No.	Percent
2B or 2A	1	5.9	15	88.2	16	94.1
3B or 3A	3	20	10	66.7	12	80
4B or 4A	4	22.2	13	72.2	14	77.8
5B or 5A	5	26.3	11	57.9	13	73.7
6B or 6A	8	47	5	29.4	9	53

The data in Table XIX show similar results in reading for the second semester after special promotion. The low record of those skipping 6B or 6A is even more pronounced than in the previous table. If only 53 percent of those who skip 6B or 6A continue to do as well or better, surely this should be seriously considered by those in charge of special promotions in reading.

C. Arithmetic

The quality of work in arithmetic, as conditioned by the particular grade skipped, is shown in the next two tables.

Table XX shows that skipping 3B or 3A places a serious handicap on the pupil for the following semester, since only 28.6 percent succeed in keeping up to the previous standard of achievement.

TABLE XX.—SHOWING THE EFFECT OF SPECIAL PROMOTION AS SEEN IN THE QUALITY OF WORK DONE IN ARITHMETIC THE FIRST SEMESTER FOLLOWING

Of Those Who Skipped:	Quality of Work					
	Lower		Same		Same or Higher	
	No.	Percent	No.	Percent	No.	Percent
2B or 2A	0	0	6	100	6	100
3B or 3A	10	71.4	3	21.4	4	28.6
4B or 4A	8	42.1	9	47.4	11	57.9
5B or 5A	8	40	10	50	12	60
6B or 6A	7	38.9	7	38.9	11	61.1

The data in Table XXI reveal results quite different from those of the previous table. According to Table XXI, skipping 5B or 5A shows more serious effects the second semester following, for 83.3 percent of those who skip 2B or 2A do as well in arithmetic the second semester after special promotion as before; 71.4 percent of those who skip 3B or 3A do as well the second semester after special promotion; 66.7 percent of those who skip 4B or 4A do as well or better the second semester; 57.9 percent of those who skip 5B or 5A do as well or better the second semester; 50 percent of those who skip 6B or 6A do as well or better the second semester following special promotion.

TABLE XXI.—SHOWING THE EFFECT OF SPECIAL PROMOTION AS SEEN IN THE QUALITY OF WORK DONE IN ARITHMETIC THE SECOND SEMESTER FOLLOWING

Of Those Who Skipped:	Quality of Work					
	Lower		Same		Same or Higher	
	No.	Percent	No.	Percent	No.	Percent
2B or 2A	1	16.7	5	83.3	5	83.3
3B or 3A	4	28.6	7	50	10	71.4
4B or 4A	6	33.3	8	44.4	12	66.7
5B or 5A	8	42.1	8	42.1	11	57.9
6B or 6A	8	50	5	31.3	8	50

Those administering special promotions would do well to keep in mind that *the fifth and sixth grades can be skipped only with the probability of considerably lowering the quality of the work in arithmetic.*

Distribution of All Term Marks Considered

A tabulation of the total of all marks in all subjects found in the individual case records shows, within each of the three intelligence groups, the distribution of the marks (1, 2, 3, 4, and 5) indicated in Table XXII. Inspection of the table shows that of the total number of term marks received by all the pupils in Group I, 34.9 percent were "ones;" the superior group received 45 percent "ones" and the very superior group 56.3 percent "ones."

Table XXII.—Percent of the Total Number of Term Marks for Each Group

MARKS

Group	1		2		3		4		5	
	No.	Percent	No.	Percent	No.	Percent	No.	Percent	No.	Percent
I	937	34.9	1234	46	464	17.3	23	0.8	23	0.8
II	887	45	819	41.6	227	11.5	21	1	14	.7
III	1353	56.3	852	35.4	163	6.7	18	0.7	16	0.6

The group of average intelligence had 46 percent of its total marks made up of "twos;" for the superior group 41.6 percent of the total marks were "twos;" and for the very superior group only 36.4 percent of the total marks were "twos."

Of the total number of marks for each group, the average intelligence group has 17.3 percent "threes;" the superior group has 11.5 percent "threes;" the very superior group has 6.7 percent "threes."

Judging from the distribution of the total (7051) bare term marks it would seem that *the 'very superior' child is likely to succeed in the majority of cases after skipping a half-grade,* whereas, for the child who makes only average intelligence scores, the practice of skipping grades would seem to be questionable.

Failures After Special Promotion

Of the 100 pupils considered in this study, 38 were in the average, 30 in the superior, and 32 in the very superior intelligence group. All the cases of failures, 'trials,' and 'conditions' found in the records of these pupils since skipping a half-grade have been tabulated to note how they are distributed among the members of these three intelligence groups.

Table XXIII.—Distribution of the Cases of Failures, Trials, and Conditions

Group	Failures		Trials		Conditions	
	No.	Percent	No.	Percent	No.	Percent
I	5	13.1	4	10.5	1	2.5
II	1	3.3	1	3.3	1	3.3
III	0	0	0	0	0	0

Table XXIII shows that, of the average intelligence group receiving special promotion, 13.1 percent failed to be promoted at some subsequent time; 10.5 percent were promoted on trial, and 2.5 percent were conditioned some time following the special promotion.

Of the superior intelligence group, only 3.3 percent were subsequently failed, 3.3 percent promoted on trial, and 3.3 percent conditioned.

The fact that the very superior group shows no failures, no 'trials,' and no 'conditions' indicates that *pupils of very superior intelligence with good school records may quite safely skip a half-grade.*

Repeated Skipping of a Half Grade

Of the 100 pupils included in this study, 24 skipped a half-grade at least twice during their elementary-school course.[4] It is interesting to note how these cases of skipping a second half-grade are distributed among the three intelligence groups.

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[4] Having finished a half-grade of work in six weeks' summer school has, for the purpose of this study, been taken as skipping a half-grade. The half-grades made in summer school are so indicated on the individual case records.

TABLE XXIV.—DISTRIBUTION OF PUPILS WHO SKIPPED MORE THAN ONE HALF-GRADE

Group	No. of Cases	Percent of Total
I. I. Q. up to 110..	7	18.4
II. I. Q. 110–120...	3	10
III. I. Q. over 120...	14	43.7

Table XXIV shows that 43.7 percent of the pupils in the very superior group skipped at least two half-grades. According to Table XXIII there were no failures, trials, or conditions in the subsequent records of these pupils. This would seem to show that *continued success is almost certain to follow special promotions of pupils of very superior intelligence.*

CONCLUSIONS

A. On the basis of intelligence rating:

1. Skipping a half-grade cannot be recommended as a plan of special promotion for pupils of average intelligence.

2. For pupils of superior intelligence, the practise cannot be recommended on the data here secured and should probably not be used except for those cases in which all conditions, such as the home, health, and temperament are most favorable.

3. Very superior pupils do skip half-grades without a noticeable lowering of their subsequent school records.

B. On the basis of term marks in fundamentals:

1. It is shown that a creditable record in several subjects for one semester is insufficient evidence upon which to advocate the skipping of a half-grade.

2. More information than the average term marks for one semester should be considered before recommending special promotion.

C. On the basis of one semester's term mark in a given subject:

1. The fact that a pupil is doing excellent work in a given subject this semester is, alone, no safe indication that he will do as well or better in that subject after skipping a half-grade.

2. The study shows that those having done work of the quality designated by the term mark "1" are less certain to maintain their previous standards after skipping than are those who previously did the quality of work designated by term marks of "2" or "3." This is more true of such a subject as arithmetic than such a subject as language.

D. On the basis of the grade skipped:

1. Skipping grades five and six seems to affect more unfavorably the subsequent record in a special subject, such as citizenship (which in this study includes conduct) than does the skipping of lower grades. Whether this is due to mal-adjustment or inability properly to sense the social responsibilities of the advanced grade, the fact should be considered by those dealing with special promotions in these grades.
2. In subjects such as reading there is a greater lowering of the pupil's subsequent record as a result of skipping the lower grades than there is as a result of skipping the fifth or sixth grades.
3. Half-grades above 2A cannot be skipped by the mentally *average* pupil without a noticeable handicap in such a subject as arithmetic for at least two semesters following.
4. For those who skip within the lower grades, there seems to be, for several years following, a handicap in writing and drawing that may be due to lack of physical development or muscular co-ordination.

E. On the basis of economy to the school district:

The question has been raised whether special promotion by skipping grades is a legitimate measure of economy. Practically one-third of the pupils specially promoted have been advanced without subsequently lowering the quality of their work. Specially promoting this class, then, is saving the district $1276.48, which may be used for other purposes. The results of the Boise, Idaho, and the Seattle, Washington, studies show similar results with regard to money saving to the district.

RECOMMENDATIONS

Those dealing with skipping grades as a method of special promotion should bear in mind the following points:

1. Several factors need to be seriously considered before pupils are recommended to skip a half-grade. Achievement alone in one or several subjects is insufficient basis upon which to recommend skipping a half-grade.

2. In cases of skipping grades, some provision should probably be made for covering the essentials missed in such a subject as arithmetic and the fundamentals in a subject such as reading. This might be done through rapid advancement classes organized near the end of the term or through coaching classes in which the advanced work is mastered previous to skipping the half-grade.

3. Pupils of average intelligence, as revealed by intelligence tests, as a rule will not succeed after skipping a half-grade; under favorable conditions pupils of superior intelligence doing excellent work may be permitted to skip a half-grade below the seventh; pupils of very superior intelligence may skip a half-grade without lowering the quality of their subsequent work.

F. STUDIES OF GIFTED CHILDREN IN THE HIGH SCHOOL

F1. THE ADMINISTRATION OF THE SUPERIOR STUDENTS IN THE UNIVERSITY OF CHICAGO HIGH SCHOOL

W. C. Reavis
Principal

The fetich of uniformity which is largely due to the development of the graded system in American public schools is responsible for the factory methods of education which have substituted the class for the individual as the unit of instruction and administration. As a result, that portion of the student body which deviates widely from the average in ability to profit from the regular work of the school has been grossly neglected and generally ignored.

In recent years elementary schools have been active in reorganizing their subject matter and in developing more effective methods of meeting the individual needs of their student personnel. Some school systems have gone much farther than others and have adopted administrative measures, such as flexible promotions, fast and slow sections, special classes, and individual instruction, designed to encourage the recognition of individual differences and to promote individual progress.

High schools have been more static. A few have attempted to meet the situation through the classification of entering students into relatively homogeneous sections on the basis of the results of group intelligence tests and other supplementary data and the variation of the work in accordance with the rate at which the respective groups were able to accomplish it. Other schools which group their entering students in mosaic sections have sought to provide for individual differences through variation in the schedules of individual students. But, by and large, a high-school student of superior ability has had to be contented in the main with courses planned for the average and with methods of teaching designed for the group. If his potential powers have been fully tested, it was because he had the initiative to forge ahead and the will to assume the responsibility for directing his own development.

In the administration of the University of Chicago High School the superior student is recognized, and an attempt is made to fit the school to his needs. This implies (1) a method of appraising the capacity, maturity, interests, and personality of the student, (2) a flexible curriculum, (3) an appropriate technique of teaching, (4) administrative measures which will make possible the realization of the school's objectives. Each of these will be discussed in turn in the paragraphs which follow.

Appraising the Superior Student

It is idle to talk of providing for the superior student unless there is developed within the school a technique for finding such students and for appraising their ability. The group test of mental ability, supplemented with other factual evidence, has contributed much toward the identification of superior students.

The University High School has developed a system of testing and recording which makes available for purposes of educational diagnosis, factual information of a much wider character. A group intelligence test is given once each year to each student; achievement tests are administered by the different departments from time to time; physical measurements, medical examination, and radiograph records of the wrist bones are made on the chronological birthday of the student or as near to that date as is possible; physical and health histories are kept up to date; pedagogical records indicating special abilities, disabilities, and interests as revealed in the classroom from time to time are secured; and a rating of the student's personal qualities by each instructor who comes in contact with the student is made at the end of each year. These reports are cumulative in character and afford valuable data for diagnostic purposes when diagnosis is required.

Other facts regarding the student's past are made accessible in order that any given case may be studied in the light of its background. From the records thus available the interplay between the student and his environment can be studied and cues may be found which may lead to successful diagnosis and proper educational advice.

Flexible Curriculum

The curriculum is organized in unitary blocks with minimal essentials to be mastered by all members of the class and supplementary projects for those students whose powers would not be taxed if only minimal essentials were studied. The flexibility of the curricular organization permits the teacher to teach groups as such and at the same time to recognize, and to make ample provision for, individual differences. Inasmuch as superior students vary greatly in special abilities, this plan of curricular organization permits a teacher to vary the experience of the students as individuals without interfering in the least with the procedure and general responsibilities of the class. The plan of organization is obviously superior to a differentiated curriculum for a relatively homogeneous group in that it makes greater and more varied provisions for the differences of individual students. It avoids the common objection to homogeneous sectioning which is that it results in the racing of students through materials organized for typical groups rather than individuals, and in the substituting for gain in time as an end, a different and a richer experience.

Appropriate Methods

In dealing with students of different degrees of maturity, ability, and experience, and of different special abilities and disabilities, in their contacts with the various subjects of instruction, it should be recognized that the teacher cannot rely on any one general teaching technique. Each subject has its own peculiar objectives, its own psychology, and its own methods.

"In the Laboratory Schools,[1] at least five different types of teaching and learning are distinguished. To these have been given the designations science type, language-arts type, pure practice type, practical arts type, and appreciation type. Under the science type there is a sub-type embracing mathematics and language structure which we sometimes call the mathematics type and sometimes the logic type. The situation changes radically and essentially as we go from type to type. In the language-arts and pure practice the active co-operation of the teacher in the study process itself is for the most part essential. In the science type, in certain phases, the co-operation of the teacher consists in giving the student a chance to work out his own salvation. In practical arts the teacher becomes in the main a foreman, while in appreciation the teacher has to create a social situation for study of which he becomes himself a part.''[2]

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[1] "Laboratory Schools" means the Elementary and High School of the School of Education, University of Chicago.

It follows, then, that the administrator who attempts to make provision for the training of superior students cannot rely on any single administrative measure, such as homogeneous sectioning, to care for all the needs of his superior student personnel. In teaching of the language-arts, pure practice, and appreciation types homogeneous grouping may be both desirable and effective, but in subjects requiring the technique of the science and practical-arts types or the mathematics sub-type other measures must be employed if the individual's interests and abilities are to be provided for fully.

Through supervised study the superior student escapes the monotony of routine and develops intellectual interests which he can pursue independently of the rest of his group. For example, if he is able to acquire mastery of the minimal essentials of a course quickly, he does not have to mark time while others labor at the task he has completed. He can undertake supplementary projects suggested by his teacher or projects of his own initiation which will broaden his experience and develop his powers.

ADMINISTRATIVE MEASURES

The University High School has attempted to develop an administrative technique which will enable its teachers to make the fullest articulation between the curriculum and the technique of teaching and the needs of individual students. The administrative office has been made the clearing house for all matters which vitally concern the school's student personnel. Reports and records which indicate what the individual is capable of accomplishing are made accessible to teachers as well as factual information regarding the students' special interests and abilities. Furthermore, the administrative officers assume responsibility for securing co-operation between persons and institutions concerned with the progress of students.

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[2] Morrison, H. C. ''Supervised study.'' *Sch. Rev.*, 31. Oct., 1923, 588-589.

When it is discovered that a student is above normal and his interests and abilities are known, an attempt is made to guide him in one or more of the following ways: (1) to put him in the proper section in those departments which desire homogeneous grouping; (2) to encourage him to undertake supplementary projects in connection with courses in which he acquires mastery of the minimal essentials sooner than the average student for whom the minimal requirements were planned; (3) to encourage him in power-gaining subjects, like English composition or foreign languages in which his rate of acquisition is distinctly superior, to undertake the next course in advance while still carrying the lower course (which may be dropped when he has demonstrated his ability to progress with the upper course); (4) to encourage the student of known ability after the freshman year to undertake a heavier schedule, which may result either in an earlier graduation or a broader and richer experience; (5) to excuse students of maturity and tested ability from phases of class routine which would contribute little to their further training or development and to substitute worthy, voluntary projects; (6) to permit superior students of the senior class and in some instances of the junior class to elect junior-college courses in lieu of regular high-school courses.

Homogeneous Sections

Homogeneous grouping as a method of providing for individual differences has not been employed at the University High School, except in the English and foreign language departments. It has been held by the other departments that the plan is not effective, except when the objectives sought are skills or powers. In English the grouping is made on the basis of the results of a group intelligence test and a series of preliminary achievement tests in English usage administered prior to the student's admission to the school. In foreign language two or more sections of a given grade are placed at the same hour in the schedule in order that fast and slow sections may be organized on the basis of the ability of the students to progress (transfer from group to group to take place whenever change is to the advantage of the pupil and the group.)

As a result of such grouping in beginning French classes during the past year, it was possible to select a group of nineteen very superior students who were able to earn 1½ units of credit in the year. A selected group in Latin was able to earn 2½ units of credit in two years. The effect of such grouping is most wholesome in that the school goes on record with the students as seeking to obviate the deadening influence of arbitrarily adhering to the standard of "time spent," by substituting the more rational standard of attainment.

Supplementary Projects

The only question which can be raised to the plan of providing supplementary projects as a part of the curricular organization in providing for superior students is the time-worn fallacy of the potency of credit rewards. Is it possible to get a superior student to do more than minimal requirements without credit rewards? After two years of experience in administering a system which has abolished marks and grades, the writer maintains that there are other appeals less artificial which afford a much stronger stimulus to a student. Approval for specific tasks, the challenge to give one's best, the opportunity to follow a genuine intellectual interest, the responsibility of being allowed to undertake work of one's own initiation, the privilege of making a personal contribution to the work of the course, any one of these motives is likely to be a more powerful challenge to the superior student to work at his potential level of efficiency than either school marks or excess credit rewards.

In the administration of the superior student the idea of giving nothing less than his best is kept before him as a duty and as a matter of self interest. He is told that his abilities will suffer from atrophy unless they are fully taxed. But in order that the appeal may not be too abstract, approval is generously given. When a student completes a supplementary project, in addition to the minimal essentials, which shows evidence of independent study and which maintains throughout the proper standards of English usage, a commendatory report is sent by the instructor to the principal briefly describing the project and giving the teacher's evaluation of it. The principal may mail the report to the parent or he may personally commend the pupil. In either case a copy of the report is filed with the student's cumulative record. The following samples illustrate the essential features of these Teachers' Reports:

> December 3, 1923
>
> *Period:* Nov. 26-Dec. 3 *Pupil:* E. F.
>
> E. F. deserves commendation for an excellent piece of supplementary work in planning and installing new lighting effects on the stage for the Drama Club.
>
> A. B., Instructor.

> November 23, 1923
>
> *Period:* Nov. 1-23 *Pupil:* M. N.
>
> M. N. has written a one-act play of commendable quality entirely aside from the required work and entirely on his own time. He should be commended for initiative and perseverance.
>
> C. D., Instructor.

> December 4, 1923
>
> *Period:* Oct. 1-Dec. 4 *Pupil:* G. H.
>
> G. H. has done exceptionally strong work in Modern History throughout the fall. His supplementary project, ''Development of the Iron and Steel Industry in Great Britain From 1735 to 1830,'' is highly commendable.
>
> X. Y., Instructor.

The commendatory report gives recognition for work voluntarily done, at the time the task occupies the attention of the student. It also gives in specific terms the nature and character of the achievement, so that those who are interested in the progress of the student may know the exact character of his interests and accomplishments and may thus co-operate more intelligently in their contacts with him.

When a worthy supplementary project has been completed, the instructor concerned may send it to the school library where it is accessioned and filed in a special case for the attention of those who may desire to examine it. The prominence given to such reports becomes an added incentive to the student to put his very best effort into his project, because he is permitted to contribute in this personal way to the school's library.

Opportunity to Acquire Skill More Rapidly

In some departments, such as English or the foreign languages, in which the development of certain powers or skills is sought, progress often takes place with individuals of superior abilities at very different rates. Even though the students are sectioned in relatively homogeneous groups, the individual of superior special ability is not always properly provided for. A plan of administering such students has been put into effect in the University High School which is designed to care for the individual who is capable of acquiring skill or power much more rapidly than his class associates. In brief, the student is encouraged to undertake work in advance of his group while retaining membership in it and at the same time to attempt to cover independently the work intervening. When he is able to demonstrate that he has acquired a skill approximating that of the upper group, his membership in the lower group may be discontinued on the condition that satisfactory standing in the advanced group is maintained.

Very few students can meet a test as difficult as that described in the foregoing paragraph. Yet it is quite possible that there are a few in every school who, if given such an opportunity, would without doubt prove themselves equal to it. The school has an obligation to develop its superior students to the fullest, and it offers a poor alibi if it allows lock-step or cumbersome administrative machinery to stand in the way.

This plan has been in operation in the University High School for several years. Usually from five to ten students profit from it annually. During the past year three students in French were able to take advantage of its provisions and to complete two units of the language in one year. One student profited similarly in Spanish and one in English.

THE HEAVIER SCHEDULE

There are relatively few students of superior ability who are satisfied merely to carry the normal load, which does not tax their full strength. Consequently, it is a common practice in many high schools to allow superior students to elect an extra subject and to accumulate additional credits which may be used to hasten graduation or to enrich the student's high-school course.

The University High School for several years has had a working agreement with the University of Chicago whereby credits earned in excess of the regular admission requirements may be applied toward advanced standing at the rate of two majors of college credit for each high-school unit offered. This arrangement has the advantage of permitting the superior student to seek his level of achievement and at the same time to retain his social contact with students of his own chronological age without suffering loss in credits earned or having to sacrifice the congenial associations of later high-school and early college years.

The amount of additional credit earned by the members of the last three graduating classes as a result of this plan is 454 units earned by 292 students. From 20 to 30 percent of the students of each class earned two or more additional units which could be applied on college standing.

SUBSTITUTION OF VOLUNTARY PROJECTS FOR ROUTINE REQUIREMENTS

In matters relating to the mastery of classroom routine it is evident that marked differences will appear in the personnel of the class, however well selected. Frequently, a talented student is able to master in a relatively short time with the minimal practice certain routine matters in usage which others acquire with difficulty. To require a student to continue such exercises after mastery has been demonstrated often results in loss of interest and the development of ineffective habits of study and work.

Instructors are therefore authorized in the University High School to permit superior students to substitute voluntary projects for routine requirements when in the judgment of the instructor the student's time can be spent more profitably on work of his own selection. The situation obtains most markedly in content subjects in which certain skills are involved in the assimilation and organization of content materials.

The use of the plan enables a teacher to deal wisely and effectively with a type of student who under routine management may become a real problem. When the regular work of the class neither taxes a student's powers nor engages his interests, the teacher must act to prevent a deterioration in morale. It is then that release from routine and the substitution of voluntary projects are likely to prove most effective.

SUBSTITUTION OF JUNIOR-COLLEGE COURSES FOR HIGH-SCHOOL COURSES

In order to provide for students of superior ability in the senior class and in some instances in the junior class, a forward step was taken by the University of Chicago in 1918 when experimentation in the University High School with courses at the college level was authorized. College English 1 and 40 were offered as a year's work to selected high-school seniors for which two majors of college credit were allowed. The experiment was successful; the amount of work was increased to include college English 41, and three majors of college credit were allowed. Now junior-college courses are offered in history, mathematics, geography, French, economics, and business administration. For the superior student whose intellectual maturity may be in advance of his physical or social status, these courses are a great boon. They offer experience at the student's intellectual level, without depriving him of the social contacts with students of his own chronological age. His mental development can thus go on in the high school without danger of intellectual stagnation while he is permitted to continue in the social atmosphere which his social and physical welfare require.

During the year 1922-23 a senior class of 106 members earned a total credit in the high school of 157 college majors, distributed among approximately one-third of the membership. The gain must be regarded in the light of institutional economy as well as an opportunity to the superior student.

CONCLUSION

The progress described in this study represents a mere beginning in providing for superior students in the high school, but it is a beginning. That the task is great and urgent cannot be questioned. The responsibility is administrative in character and must be accepted by every person with administrative duties in the modern high school. If tradition or cumbersome administrative machinery interfere, then they must be modified. The school has an obligation to its superior students which can neither be evaded nor subordinated. When properly discharged, society, as well as the individuals concerned, receives the benefits.

F2. DIFFERENTIATED COURSES FOR PUPILS OF SUPERIOR ABILITY IN THE J. STERLING MORTON HIGH SCHOOL

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Cicero, Illinois

Since September, 1920, the pupils in the J. Sterling Morton High School, at Cicero, Illinois, have been grouped in sections which are fairly homogeneous in ability. This grouping has been done principally upon the basis of the results from group tests of mental ability, checked later by pupil performance, teacher's judgment, and individual intelligence testing. The work required from pupils of superior or inferior ability has been differentiated from that formerly required of all pupils, with highly satisfactory results in reducing failures, retaining pupils in school, and meeting the needs of the individual pupil—especially those with ability above the average. Lack of space will not permit a complete account of the differentiation between average and superior sections in all academic subjects, but a few typical cases will be given.

ENGLISH

The English department has worked out differentiated courses in more detail than have other departments. A good example is that of first-year composition. During the first month all sections are given the same course, which is as follows (omitting specific directions and references to texts):

Technique

- The artistic page
  - See department instructions
- Good form in oral composition
  - Posture, voice, manner
- Capitalization
  - Beginning of sentence
  - Proper nouns
  - Proper adjectives
  - Names of months, days
  - Titles of books, themes, etc.
- Punctuation
  - Period: Declarative sentence
    - Abbreviations
  - Question mark
- Use of dictionary
  - Main part
- Gazetteer
  - Biographical
  - Pictorial
  - Addenda
- Formation of definitions

Practice

Oral theme: Class contest in telling the best possible joke, the teacher to set the pace in giving the assignment.

Written theme: Limited to one paragraph. An exciting moment from experience of pupil or member of his family. (Foreign-born children have interesting immigration experiences.)

Minimum Essentials Test

1. Written form
2. Capitalization
3. Periods
4. Question marks
5. Ability to judge where to look for words obviously belonging in certain sections of the dictionary
6. Ability to form simple definitions containing class and distinguishing characteristics

At the end of the month is given the minimal essentials test covering the points just specified. The teacher's acquaintance with the pupils' work for a month, together with the results of the minimal essentials test and other tests, makes it possible at this time to shift pupils who have been obviously misplaced, into higher or lower sections before a differentiation in work has begun.

The second month's work, which follows, shows the kind of differentiation. It will be noticed that some of the topics for the low sections are reviews of topics occurring in the first month's work; this is due to the fact that the pace during the first month has been too severe for the pupils in the low sections.

High Sections
Technique

Punctuation
  The apostrophe
  Addresses, dates
Grammar
  Verbs
  Nouns
  Subject of verb
  Pronouns
  Predicate nominatives
  Object of verb
  Transitive and intransitive verbs

Practice

Oral theme: How to make an article the pupil has actually made, or how to play a game. (Encourage use of diagrams.)

Written theme: How to find some place in the pupil's own experience.

Middle Sections
Technique

Punctuation
  The apostrophe
  Addresses, dates
Grammar
  Verbs
  Nouns
  Subject of verb
  Pronouns
  Predicate nominatives
  Object of verb

Practice

Oral theme: How to make an article the pupil has actually made, or how to play a game. (Encourage use of diagrams.)

Written theme: How to find some place in the pupil's own experience.

Low Sections
Technique

Punctuation
  The apostrophe
  Addresses, dates
Grammar
  Verbs
  Nouns
Insistence upon proper form
Use of dictionary
Logical definition
Spelling—selected from written work

Practice

Oral theme: How to make an article the pupil has actually made, or how to play a game. (Encourage use of diagrams.)

Written theme: How to find some place in the pupil's own experience.

Minimum Essentials Test	*Minimum Essentials Test*	*Minimum Essentials Test*
1. Apostrophe: possession, contraction.	1. Apostrophe: possession, contraction	1. Apostrophe: possession, contraction
2. Comma with addresses and dates	2. Comma with addresses and dates	2. Comma with addresses and dates
3. Recognition of verbs, nouns, pronouns	3. Recognition of verbs, nouns, pronouns	3. Recognition of nouns and verbs
4. Recognition of subjects, predicate nominatives, direct objects of verbs.	4. Recognition of subjects, predicate nominatives, direct objects of verbs	
5. Discrimination between transitive and intransitive verbs		

MATHEMATICS

In mathematics two types of differentiation have been tried: enrichment of the course, and more rapid progress. Any mathematics text offers more material than is needed for the average class, but superior sections are able to cover this and additional material because they need less explanation of difficult processes, they need less drill on fundamentals, and they can handle longer and more varied assignments. An attempt is made to keep all sections together during the first month, in order to facilitate such shifting of pupils as may be necessary. More rapid progress was tried with one class, but has not been repeated because of the difficulty in obtaining *college* credit for a year's work in a subject done in less than a year's time! In this case there were ninety pupils in three sections at the same hour: forty in the high section, thirty in the middle section, and twenty in the low section. The middle and high sections had kept together in the text; the high section, however, had been doing more intensive work. At the beginning of the fourth month, it was decided to let the high section go at a faster rate. The plan was explained to the high section and all who did not care to go faster were allowed to change to the middle section. A few who had not been doing superior work in the high section were also sent to the middle section, and three who had been doing superior work in the middle section were sent to the high section. After these changes had been made, there were thirty in the high section and forty in the middle section. This high section then finished their text, Breslich's *First-Year Mathematics,* and began Breslich's *Second-Year Mathematics* before the end of the year. During their second year they finished the latter book and went half way through Breslich's *Third-Year Mathematics,* doing at all times stronger work than that of the average section. The class was not continued the third year, but the pupils who wish the second half of third-year mathematics will take it the second semester with a regular third-year class.

SHORTHAND

In shorthand, classes are allowed to progress as fast as their ability warrants. Some of the highest sections will do three semesters' work this year in two semesters. These pupils are not worried about receiving college credit, as it is a 'bread-and-butter' subject to them. They cover the theory more rapidly and take up dictation sooner. Pupils in low sections, who learn more slowly, may require more than a year in which to do a year's work; but pupils in all sections in shorthand are required to reach a certain rate of speed in taking dictation before a certificate is given.

MODERN LANGUAGES

In first-year French and Spanish all sections cover the same number of lessons in the grammar, but the high sections do more reading. High sections have more time for conversation, either using the vocabulary of the lesson or new subject matter as a basis for broadening the pupil's vocabulary. High sections write more original compositions; they do more reading in foreign newspapers, from which oral reports are made to the class in the language. They require less time for simple grammatical constructions and pronunciation.

AUTO THEORY

In auto theory the following differentiation is carried out:

Low section: Minimal essentials of auto theory.

Middle section: All of the above, plus about thirty percent more subject matter. This added subject matter takes up more difficult theory involved in the electricity of the auto, and a certain amount of trouble study. All of the work is covered in greater detail.

High section: All the requirements of the middle section with a more comprehensive use of other texts, reference books, advertisements, and other sources of material.

PHYSICS

In physics high sections do supplementary textbook work, solve more problems, carry on supplementary experiments, and are expected to achieve a greater accuracy in laboratory work. In the other sciences differentiations of a similar nature are carried out.

SOCIAL SCIENCE

In addition to differentiation in requirements in the different sections in social science, more advanced textbooks have been used in higher sections and easier texts in lower sections. No inconvenience is caused to the pupil if he is changed to a higher or lower section because the textbooks are furnished by the school.

It will be seen that most of the differentiation of work consists in requiring that pupils in high sections shall exceed in quality, and usually in quantity, the work of the average section. This means, for example, that a student taking modern history in a high section will spend the same length of time as the student in an average section and receive one unit of credit. There has been no saving of time—and it is a question as to whether a saving of time should be attempted in such a subject—but there has been a distinct advantage accruing to the superior student. He has been competing with other students of his own intellectual caliber, and has been doing work which challenges his capacities, instead of 'taking it easy,' as many such students will do in a class which contains pupils of too large a range of ability.

On the other hand, our experience with classes making more rapid progress in mathematics and shorthand, raises the question of the possibility and wisdom of making provision for classes of exceptional students to capitalize their ability in that manner. In such subjects as mathematics, foreign languages, shorthand, and English composition, there is a gradual increase in difficulty such that success in any semester's work practically requires success in the work of the previous semester. There is also a certain definiteness about them which lends itself more readily to measurement by standard tests. Since this is the case, colleges and universities should be able to make provisions for accepting units made in less than the standard time in accredited schools, and the pupil who has the ability to do three years' work in such subjects in two or two and one-half years certainly should be allowed to do it.

F3. THE NEEDS OF THE SUPERIOR PUPIL IN THE STUDY OF MATHEMATICS

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One of the most difficult tasks in high-school teaching is to hold the class together and to reach the point of mastery with few laggards. The unusual pupil, bright or slow, at either end of the scale presents a serious problem even under skillful teaching and when every effort is made to reduce the extreme differences in rates of learning.

This is particularly true in the field of mathematics. In the teaching of a topic directed to the average pupil of the class, the bright pupil has little difficulty in following the instructor. Sometimes he is able to think ahead of the instructor. In the development of a lesson he contributes most of the thinking. During the recitation he monopolizes the time. Having understood the assignment better than his less gifted classmates, he profits proportionally from home-study. He receives all the training. Success gives him a feeling of superiority. The gap between him and his associates widens day by day. To the teacher, the bright pupil causes but little worry, while the problem of saving the slow gradually reaches the stage where its solution is impossible.

With the introduction of supervised study, the situation changes. The slow pupil's difficulties are coming to the attention of the teacher. While he gets the share of teaching he deserves, the bright pupil is left alone to struggle with his difficulties as well as he can. In this case the bright pupil feels that he is being neglected. When the work is simple, he completes it as rapidly as possible. While waiting for the other pupil to finish the required work, he is idle, he marks time and may become a disturbing factor in the classroom. The bright pupil has given some teachers sufficient trouble to cause them to drop supervised study and to return to the traditional homework-recitation procedure. In supervised study the superior pupil may become a greater problem than the slow and less gifted pupil in mass instruction.

Experimental investigations show that in supervised study the poorer pupils make better progress than in the home study-recitation plan but that the progress of the bright pupils is retarded. In the University High School the department of mathematics tested the relative efficiency of the home-study plan and supervised study plan with two classes of approximately equal ability.[1] At the end of the period of experimentation an examination was given to both classes, the grades of which are shown in Table I.

TABLE I.—PERCENT OF PUPILS OBTAINING VARIOUS GRADES

Sections	A	B	C	D	F	Average
Supervised Study No Homework	0	6.2	37.5	25	31.2	65.5
No Supervised Study Homework	7.1	21.4	21.4	0	50.	62.8

It it seen that the higher average of the supervised study class was a result of gains made by the slow pupils. The bright pupils did not do as well as those of the home-study class. It is possible that with a special technique for the bright pupils the gain of the supervised study class would have been further increased.

Similar results are stated by Breed,[2] who carried on an experiment with supervised study in a number of schools, under scientifically controlled conditions which made it possible to arrive at a number of definite conclusions. These agreed with the results previously stated. He found that in all subjects the poorer pupils made better progress than before, and that the progress of the bright pupils was retarded. Because of the fact that the superior pupils do not develop in supervised study as well as under a home-study plan, the department of mathematics of the University High School has been working on the problem of improving the technique for the superior pupils.

First, the plan of grouping pupils according to ability was tried. Two divisions, one composed of the upper half, the other of the lower half of the group of pupils, were scheduled for the same period. The question of allowing the stronger section to proceed more rapidly than the other was considered, but it was decided to keep the two classes together, to attempt to attain only mastery of the minimal essentials in the slow class, and to give the superior class a fuller course. This made it possible to make adjustments of misplaced students at any time. To the classes, it was explained that the grouping was for their own good, that it enabled the teacher to give them the type of instruction best adapted to their needs, and that this created conditions under which greatest progress could be made by all. Although the plan of classifying pupils according to ability seemed to solve the problem of the bright pupil, it complicated matters for the slow group. Both groups soon discovered that they were classified according to ability. Some pupils who were doing well in other subjects considered it a disgrace to be in the slow section in mathematics. This caused them much unhappiness, especially when they failed to improve sufficiently to be transferred to the other class. Others developed the attitude that there was no incentive for doing their very best because it had been found that they lacked mathematical ability. An amusing case was that of two boys who had been transferred from the slow to the better class. After a few days they came to the teacher of the slow section and asked if they could not come back to him. The request for transfer from the fast to the slow section seemed so unusual that the teacher questioned them closely. He found that their real reason for wishing to come back was that they had to work to keep up with the bright pupils and preferred the easy life in the slow section.

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[1] "'Teaching high-school pupils how to study.'' *School Review,* 20: October, 1912, 505-515.

[2] Breed, F. S. ''Measured results of supervised study.'' *School Review,* March and April, 1919, 186-204, 262-284.

Because the method of grouping was a source of disappointment to a number of pupils in the slow class, depriving them of the enjoyment essential for success, and because of administrative difficulties in making out programs to enable these pupils to get into the proper group, the department abandoned the plan of classification and tried to find a different solution of the problem of the bright pupil. It was agreed to try the plan of allowing pupils to proceed according to their ability and at their own rates.

It was found that the rapid learners and the capable and industrious pupils mastered the essentials quickly, passed on to the next unit before many pupils had completed the first, and continued to gain. This raised several teaching problems. Typical errors, arising in the process of assimilation and occurring with practically all pupils, had to be taught individually rather than to the group as a whole, causing much waste of the teacher's time. It was impossible for the teacher to keep in close touch with the rapid workers. In their desire to go ahead, they became superficial, omitted difficult problems, and did inaccurate work. The need of a further modification of the plan became apparent because of the desirability that all pupils in a class in mathematics complete the study of a unit at the same time.

One of the aims of supervised study is that each pupil should master the unit independently, under the wise direction of the teacher. Being a rapid worker, the superior pupil reaches the difficult points first. He is therefore the first to call for help from the teacher, frequently without having made any attempt to overcome the obstacle without assistance. He must be made to understand that he is able to, and that he is expected to, find his way out of the difficulty, that it is for his best not to get assistance from the teacher, nor from other capable pupils, that he will be given help at the discretion of the teacher. When dealt with in this fashion, the superior pupil is kept employed while the other pupils of the class approach the difficult place and have their chance to find the solution. The class is then asked to stop working and the group receives teaching as a whole. This procedure does justice to the best pupils and keeps the class together.

It is an interesting fact that bright and rapid pupils may need to do more work to assimilate a mathematical principle than is necessary for the slow, but careful pupil. While the latter works a few problems, trying to understand and to remember every step, the former sometimes progresses rapidly but too superficially, so that he attains understanding only after having worked a large number of problems. For example, in the solution of simultaneous linear equations, tests revealed that some of the slowest pupils in the class understood the method clearly after working 4 problems, while some of those who had worked more than 10 problems did not have complete understanding of the process. Hence, in a list of problems, the superior pupils should be expected to solve a larger number and some of a more difficult type than those worked by the slower pupils. Thus, the fact that not all pupils work the same number of problems need not be of concern to the teacher.

However, in a class there are likely to be pupils who, because of ability or industry, complete the work on the fundamentals of a unit in advance of the class. These individuals are either released for work in another subject or are assigned supplementary projects in connection with their work in mathematics. For example, it happens that in a given test on a unit several pupils write a perfect paper, but that the class as a whole needs further instruction. On the day, or days, when the class is re-taught, those not needing the instruction are excused to go to the library where they may work on their special projects.

It has been seen that in supervised study in mathematics three things are done to help the superior pupils. They are taught to overcome difficulties without assistance; they are expected to do more than other members of the class; and they may carry on projects in addition to the work assigned to the class as a whole. To do this, they may occasionally be released from attending class until the group has completed assimilation.

It remains to explain more fully the nature of supplementary projects in mathematics. When the teacher feels convinced that a pupil has done the required work on the fundamental unit, he allows him or encourages him to engage in independent study. Such an investigation is more difficult to carry on in mathematics than in other subjects. Articles and books dealing with mathematical material usually contain facts and symbols with which the pupil gets acquainted only in more advanced courses than the ones he has taken. When he meets these situations, he is unable to proceed without assistance. This may happen almost at the beginning of his reading. After a fruitless struggle of hours or days to see through the difficulty, he becomes discouraged. He may give up altogether or he may exchange the project he started out with for one so simple that it represents no real study nor genuine intellectual effort. Until we have a variety of mathematical literature which can be read and understood by pupils who have reached certain levels in the study of mathematics, pupils need the advice of the teacher during the time they are working on a project. To begin with, the topic selected must be quite specific and careful instructions must be given to make sure that the pupil understands what is expected. Definite textbooks must be mentioned in which he is to read. It may be necessary with the younger pupil to give definite page references. To him is left the task of weaving together the facts found in these references into a coherent report.

This work cannot be carried on without a suitable mathematical library. Many pupils are interested in the historical development of the subject. Hence, the mathematical library should contain books on the history of mathematics. Others enjoy the recreational phases and need to be supplied with material of this type. The journals on secondary mathematics, although written for the teacher, contain much of interest to the pupil which he can read with profit. For this purpose a library should contain the following:

Books on the History of Mathematics

Allman—*Greek Geometry From Thales to Euclid*
Ball—*History of Mathematics*
Cajori—*History of Mathematics*
Gow—*History of Greek Mathematics*

Mathematical Recreations

Ball—*Mathematical Recreations and Essays*
Jones—*Mathematical Wrinkles*
Licks—*Recreations in Mathematics*
Shubert—*Mathematical Essays and Recreations*
White—*Scrap Book of Mathematics*

Famous Mathematical Problems

Rupert—*Famous Geometrical Theorems and Problems*
Withers—*Euclid's Parallel Postulates*
Young—*Monographs*

Famous Mathematicians

Frankland—*Story of Euclid*
Smith—*Euclid, His Life and System*

Journals

School Science and Mathematics
The Mathematics Teacher

Other Books of Interest

Branford—*A Study of Mathematical Education*
Brewster—*Common Sense of the Calculus*
Bruce — *Some Noteworthy Properties of the Triangle and Its Circles*
Calhoun—*In Algebra Land*
Carus—*Foundation of Mathematics*
Carson—*Mathematical Education*
Conaut—*The Number Concept*
Fine—*Number System in Algebra*
Jackson—*Sixteenth Century Arithmetic*
Manning—*Fourth Dimension Simply Explained*
Morris—*Geometric Drawing for Art Students*
Sykes—*Problems for Geometry*
Thompson—*Calculus Made Easy*
Whitehead—*Introduction to Mathematics*

F4. PROVIDING FOR SUPERIOR STUDENTS IN THE SOCIAL STUDIES

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In the teaching of the social studies in the University of Chicago High School provision is made for superior students in a variety of ways. Three of these will be described in this article. They are as follows: first, exemption from requirements made of the class as a whole; second, opportunity for wide reading of a supplementary character; third, provision for elementary research problems and enterprises. Each of these will be discussed in turn.

Exemption From Routine Requirements

Class requirements in the social studies in the University High School fall into two main categories: first, mastery of given subject matter—to be described later; second, mastery of certain skills which are useful and at times essential for success in intellectual undertakings.

Ability to do various types of written work with a fair degree of excellence occupies an important place among these skills. The making of analytical outlines is one of the types to which systematic attention is given. Beginning with Community Life, the basic course in the social-science sequence, and continuing through the other courses given in the department, an effort is made to teach pupils to think straight, to discover the manner in which an author builds up his discussion of a topic, and to discriminate between ideas of major importance and those of minor importance. In the accomplishment of these ends the analytical outline has proved a most effective device. No pains are spared in teaching pupils to master it.

From the first, differences appear between the members of a class in the doing of this kind of work. Occasionally, a few pupils are able to master in a relatively short time the principles involved in the making of analytical outlines: namely, discriminating between major and minor ideas, the grouping of the minor (and supporting) details under appropriate heads, and the arrangement of the various divisions in proper sequence. The majority of pupils, however, learn to apply these principles only after long and patient effort.

In so far, then, as instruction in the making of outlines has as its objective the acquisition of skill, the need for the requirement disappears as soon as a pupil has demonstrated his ability. Accordingly, as the work proceeds, pupils are told that the making of a satisfactory outline of one section of a given chapter or of one part of a unit will exempt them from the making of outlines of the remaining sections of the chapter or of other parts of the unit. After a pupil has given a number of such demonstrations, he is excused from all outline work which has for its purpose the inculcation of the skill in question, and he is required henceforth to make only such outlines as are considered needful for the mastery of the subject matter.

The same principle applies in the making of summaries, digests, and other kinds of notes: pupils who demonstrate their ability are excused from the obligation. In short, pupils who show that they have mastered a device are no longer required to study it. It should be added that pupils who have once learned the value of these devices seldom discontinue their use even when no requirement is made.

Social-Science Sequence and Organization of Material

So much by way of explanation of the first provision for superior students in the social sciences, namely, exemption from routine requirements exacted from the class as a whole. Before describing the other two provisions mentioned at the beginning of the article, it is necessary to give the social-science sequence in the University High School and to explain briefly the way in which the subject matter of the various courses is organized.

The sequence of social studies in the University High School is as follows: first, ''Community-Life English''—a combination course in social science and English comprising an introduction to the study of society; second, ''Survey of Civilization''—a course in early European and American history, covering, in a series of cross-sectional studies, the history of mankind from the dawn of civilization to, approximately, A. D. 1750; third, ''Modern History''—a unified course in American and European history, covering, roughly, the period from the middle of the eighteenth century to the present time; and fourth, ''Modern Problems''—a course in the fundamental principles of political science and political economy with special consideration to present-day problems in which these principles are illustrated or involved.[1]

The material in these courses is organized in units. Each unit requires for the great majority of pupils from three to five weeks of study for mastery. When the time comes for study, each pupil is supplied as a rule with mimeographed guidance sheets on which are given the minimal essentials of the unit, together with specific references to the books, magazines, and pamphlets in which a discussion of the minimal essentials may be found. The classroom is regarded primarily as a place for study, rather than as a place for recitation; and supplementary and reference books are assembled in the room for the use of the pupils during the class period. In mastering the minimal essentials pupils are usually required to make outlines and take notes, with the exceptions noted above. Assimilation and teaching tests are given from time to time. Problems which cause difficulty and which require elaboration are occasionally taken up in class for explanation and discussion.

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[1] The organization of these courses as well as a description of various phases of the instructional technique which is followed can be found in these references: first, Community-Life English, in W. G. Kimmel's ''Testing pupils' study progress in community-life English,'' *Studies in Secondary Education,* 2: March, 1924; and H. C. Hill's ''Opportunities for correlation between community life and English,'' *School Review,* 30: January-March, 1922, 24-36, 118-126, 175-186; second, Survey of Civilization, in A. F. Barnard's ''A course in survey of civilization,'' *Studies in Secondary Education,* 1: January, 1923, 92-102; third, Modern History, in H. C. Hill's ''A course in modern history,'' *ibid.,* pp. 103-115; fourth, Modern Problems, in H. C. Hill's ''Experiments in advanced courses in social science for high-school seniors,'' *Studies in Secondary Education,* 2: March, 1924. The relation between these courses is explained in ''Educational economy in the reorganization of the social studies,'' *Twenty-second Yearbook* of this Society, Part II, 1923, 111-125, and in ''An attainable program of social studies for the high school,'' *Historical Outlook,* 13: December, 1922, 353-356.

Naturally, pupils whose work is of such quality as to entitle them to be excused from certain class requirements for the reasons previously explained or who, as the result of superior native endowment, better preparation, or more intensive application, master the unit in less time than their classmates, are free for other undertakings while the rest of the class is still engaged in assimilating the minimal essentials. It is at this time that the second and third provisions made for such pupils come into service.

Opportunities for Wide Supplementary Reading

The second provision, it will be recalled, is the opportunity to do wide reading of supplementary character. In the Community-Life course—a course in which all the pupils do extensive reading—those who master the required work in a unit before their classmates have increased opportunity for such activity. In a unit like ''Work and the Worker,'' for example, they may continue their reading of such personal narratives as Mark Twain's *Roughing It,* James J. Davis' *The Iron Puddler,* Andrew Carnegie's *Autobiography,* or of such imaginative works as Rudyard Kipling's *Captains Courageous,* H. S. Latham's *Jimmy Quigg, Office Boy,* Victor Hugo's *Toilers of the Sea,* Kate Douglas Wiggin's *Polly Oliver's Problem,* or William Dean Howells' *The Rise of Silas Lapham.* In order to stimulate and guide this reading, rich and varied book-lists are furnished with each of the units comprising the Community-Life course.

In the history courses, opportunities for wide supplementary reading are also provided. In ''Survey of Civilization'' pupils interested in ancient Egypt read extensively in Maspero's *Life in Ancient Egypt and Assyria,* Breasted's *History of Ancient Egypt,* and Irman's *History of Ancient Egypt,* and in such historical fiction as Eber's *Uarda,* and *An Egyptian Princess.* In Modern History, such supplementary reading is usually in the realm of reminiscences, diaries, memoirs, historical novels, and the more interesting biographies and histories.

The book-list on the ''Slavery Controversy,'' for example, comprises twenty-eight biographies and special historical works, twenty-nine memoirs and personal narratives, and twenty historical novels.

In connection with this unit one girl read Dawson's *A Confederate Girl's Diary*, Eggleston's *A Rebel's Recollections*, Humphreys' *Four Months in Libby*, Putnam's *A Prisoner of War in Virginia*, Fox's *The Little Shepherd of Kingdom Come*, Page's *Two Little Confederates*, Stowe's *Uncle Tom's Cabin*, Libby's *Stories, Letters, and Speeches in the Life of Lincoln*, and portions of Dittenhoefer's *How We Elected Lincoln* and Charnwood's *Abraham Lincoln.*

In the courses in history, as well as in the course in Community Life, pupils do considerable reading outside the textbooks as an integral part of the regular work. In "Modern History," for example, classes which were asked to keep a record of the reading done during the three weeks spent on the last unit, "The World War and World Reconstruction," reported an average of 655 pages for each pupil. Outstanding pupils read double and triple this amount.

Provision for Research Problems and Enterprises

As a rule, the most valuable type of supplementary reading seems to be that which originates in, and is inherent to, some elementary research problem or enterprise. This, it will be remembered, constitutes the third provision for superior students to be discussed in this article.

In addition to the minimal essentials and the reference citations which are on the guidance sheets furnished to the pupils at the beginning of the study of a unit, there are ordinarily suggestions for supplementary projects, or undertakings. For example, the guidance sheet for the "French Revolution" (the second unit in Modern History) is as follows:

THE FRENCH REVOLUTION

A. Minimal essentials:
  1. Conditions under the old Régime: social classes, autocracy and inefficiency of government, privileges and abuses.
  2. The intellectual revolution: discoveries in the natural sciences and their influence; philosophers in the social sciences—Voltaire, Montesquieu, Rousseau.
  3. French revolution, 1789-1795: financial troubles of the government; influence of the American Revolution; epochal events—Oath of the

Tennis Court, fall of the Bastile, Declaration of the Rights of Man, chief reforms of the National Assembly and the National Convention.
4. Napoleonic era, 1795-1815: outbreak of war in Europe; the rise of Napoleon; the spread of revolutionary ideas and reforms throughout Europe; the Continental System and the fall of Napoleon; the effect of events on the United States—political factions, Citizen Genet, XYZ affair, Alien and Sedition Acts, *Quasi* war with France, purchase of Louisiana, the Embargo Policy, the War of 1812.
5. Heritage of the Revolution: political, social, intellectual.

B. Supplementary projects or studies:
  1. The benevolent despots (one)
  2. The famous leaders of the Revolution (one)
  3. The Reign of Terror (some phase)
  4. The career of Napoleon (some phase)
  5. Effects of the Continental System on France or England
  6. Napoleon's reforms in Spain
  7. Effects of the Embargo policy on New England (or on one of the European countries)
  8. Napoleon's work in peace
  9. Relation between the Industrial Revolution and Napoleon's downfall
  10. Revolutionary reforms in Prussia, Spain, or Italy.

The supplementary projects listed above are offered merely by way of suggestion; as a rule, the most valuable enterprises are those which originate with the pupils themselves. During the study of a unit there is often some phase not covered by the minimal essentials which arouses interest and which leads to special investigation. In these instances it is customary for the pupil to have a conference with the teacher before beginning research; the approval of the teacher is, in fact, expected before detailed study is undertaken. By this means time and effort are saved on projects not germane to the unit or upon which material may be either inadequate or inaccessible.

A rejection of a study proposed by a pupil is seldom necessary, but a modification of the original proposal, usually by way of delimiting the scope of the inquiry, frequently results from the conference. Thus, in "Modern Problems" a boy who proposed to make a study of "Procedure in Foreign Legislative Assemblies" (the unit under way was "The Making of Law") was quick to see the advantage of confining his efforts to "Legislative Procedure in the British Parliament."

When a pupil has selected a subject, he usually begins work by making a rapid preliminary survey of its scope and character as found in some of the brief accounts or narratives. He then makes a list of the material he can find and prepares a rough outline to serve as a guide in his further work. His bibliography and outline are sometimes submitted to the teacher for suggestion and correction, although as a rule a pupil proceeds with his work independently unless he encounters some obstacle which he cannot surmount. In this case he consults with the teacher, who gives him whatever counsel or assistance seems needful. It should be said, however, that for the most part the pupils who undertake supplementary projects master their own difficulties and solve their own problems, and the teacher generally limits his assistance to suggestions or thought-provoking inquiries.

When completed, a supplementary enterprise ordinarily takes the form of a carefully-written exposition of the topic. The longer papers are usually supplied with preface, bibliography, and footnote citations to the sources of information which were used. The best of the papers show wide and thorough reading and give evidence of thoughtful preparation and painstaking composition. Their extent and merit differ widely in accordance with variations in the character of the topics, the time devoted to the study, and the age, capacity, and interests of the pupils concerned.

Some of the papers contain but a thousand words; others contain as many as fifteen or twenty thousand words. Some are the outcome of an interest aroused early in the year and continued during an entire semester; others are the result of the work of two or three weeks. Some present but a single and narrow phase of a topic; others give a rounded-out and fairly exhaustive treatment.

Illustrations of Supplementary Projects

Opportunities for supplementary projects of a rich and varied nature are especially abundant in the course in "Community Life." Among those which have grown out of the reading of historical and travel literature may be mentioned the following: "The Marquesans: a Primitive Community," "Marriage Customs in Other

Lands,'' ''The Sports and Fetes of Japanese Children,'' ''Oriental Rugs.'' Representative of local studies and first-hand investigations are papers on ''By-Products of Coke,'' ''The Making of Automobile Wheels,'' ''The Halstead Street Community,'' ''The Chicago Water Supply,'' ''Chicago Artists and Their Work,'' ''Art Color Printing.''

From the reading of imaginative literature have come such studies as ''Schools of Old England as Represented by Charles Dickens,'' ''The Detective in Fiction,'' and ''The Unfortunates as Treated in Literature.'' The first of these had its origin in the study of the unit ''The School'' and was a product of the reading of different novels of Dickens in which are pictured the schools of England of the early nineteenth century; the second, which developed in connection with the unit ''Protection,'' was a comparison between fiction detectives, with the discriminating conclusion that ''after all it is the case rather than the detective that makes for interest'' in a detective story. The third paper originated in the unit ''The Handicapped'' and was the outgrowth of the reading of Dickens' *Oliver Twist,* and *Little Dorrit,* Hugo's *Les Misérables,* Collins' *Hide and Seek,* Eliot's *Romola,* Keller's *The Story of My Life,* and *The World I Live In,* Cooper's *The Deerslayer,* Kipling's *The Light That Failed,* Bulwer-Lytton's *The Last Days of Pompeii,* and Brontë's *Jane Eyre.* In his paper the pupil showed how these authors utilized and treated such themes and materials as crime and criminals, the blind and the deaf, the feeble-minded, and the insane.

Projects of a statistical nature, the chief outcome of which is the making of graphic charts of various sorts, have proved engrossing to some pupils. As examples of such work—chiefly the product of the courses in ''Community Life'' and ''Modern Problems''—may be cited the following: a survey of two Chicago newspapers to discover the relative amount of space devoted to the subject of crime and law-breaking; a survey of two Chicago newspapers to find the relative space given to recreation and civic beauty; a survey to find the relative space given to athletics and other school activities in the school daily paper; a statistical study of the number of people killed in Chicago by automobiles since January 1, 1923—age, occupation, nationality, section of city; a detailed study of the efficiency of traffic regulations in through streets; a chart showing the organization of the federal judiciary.

As typical of the supplementary enterprises carried out in ''Modern History'' are papers on ''The Agricultural Revolution;'' ''Eli Whitney, His Life and Inventions;'' ''The Early Industrial Revolution in America;'' ''George Jacques Danton;'' ''The Boyhood and Youth of Napoleon;'' ''Analytical Historical Study of *Les Misérables, Ninety-Three,* and *A Tale of Two Cities;*'' ''Development of the Iron and Steel Industry in Great Britain From 1735 to 1830;'' ''The Red River Campaign;'' ''The Last Invasion of Missouri;'' ''Lincoln's Attitude on Slavery Questions as Illustrated in His Speeches.'' Students have also prepared large wall maps for use in the classroom.

In ''Modern Problems,'' topics which have been investigated include ''Child Labor,'' ''The Rise of the British Parliament,'' ''The Canadian Executive,'' ''The British Cabinet,'' ''Presidential Appointments and Senatorial Courtesy,'' ''English Judicial Organization and Procedure,'' ''The Single Tax as Advocated by Henry George.''

Purpose of Provisions for Superior Students

The three provisions for superior students which have been described in this article have for their main purpose the cultivation of genuine intellectual tastes and abilities. The exemption of individuals from routine requirements of which they have demonstrated their mastery is educational economy; exemption also serves as a gateway for the achievement of intellectual desires which are oftentimes impeded or made impossible of realization when such requirements are exacted.

Opportunities for wide supplementary reading, the second provision, has proved a means both of arousing and of gratifying mental curiosity and intellectual interests.

The elementary research project, the third provision, has introduced pupils to the work of the scholar and has contributed to a genuine appreciation of learning.

In short, the three provisions for superior students seem to have promoted intellectual achievement and to have resulted in an enrichment of life.

SECTION III—BIBLIOGRAPHY

CHAPTER XIII

ANNOTATED BIBLIOGRAPHY ON GIFTED CHILDREN AND THEIR EDUCATION[1]

Compiled by
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1. ADLER, MARTHA. "Mental tests used as a basis for the classification of school children." *J. Educ. Psych.*, 5: 1914, 22-28.

This article aims to prove by the results of two experiments that the Binet test forms an excellent basis for the classification of young pupils from three standpoints: the pupil's, the teacher's, and the supervisor's.

2. ALEXANDER, J. M. "Binet-Simon test in practical use in the public schools of Hinsdale, Illinois." *Elem. Sch. Jour.*, 21: October, 1920, 146-48.

Fifty-three first-grade pupils were tested and rearranged on the basis of their ability in three sections, the best of which did extra work. Also special classes in other grades were tested and handled in accordance with the results.

3. ALEY, J. A. "Care of exceptional children in the grades." *Proc. N. E. A.*, 1910, 881-886.

Explains the division of exceptional children into four groups. Factors in the success of the teacher are enumerated.

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[1] The main portion of this bibliography has been supplied by Dr. Henry. For valuable assistance in preparing the annotations, acknowledgment is due to Miss Margaret Joseph, graduate student in the University of Michigan, and to Frank Whitehouse, Research Assistant, School of Education, University of Michigan. Several titles, with their annotations, have also been taken from the *Annotated Bibliography Dealing With the Classification and Instruction of Pupils to Provide for Individual Differences*, Bulletin No. 16, 1923, Bureau of Educational Research, College of Education, University of Illinois, prepared by Charles W. Odell, to which the reader is referred for further references on cognate topics.—*Editor.*

4. Allen, R. D. "The uses of intelligence tests in educational administration in the Providence schools." *Sch. and Soc.*, 18: Sept. 22, 1923, 335-339.

Discusses the advantages of acceleration classes. Meets the ordinary objections to acceleration as opposed to 'enrichment.'

5. Almack, J. C., and Almack, J. L. "Administrative problems connected with gifted children." *Educ. Admin. and Superv.*, 8: March, 1922, 129-136.

A study of superior children in the junior and senior high school of Eugene, Oregon. School progress conditioned by the home.

6. Almack, J. C., and Almack, J. L. "Gifted pupils in the high school." *Sch. and Soc.*, 14: Sept. 24, 1921, 227-228.

Shows that about 8 percent of the six upper grades possess superior ability discoverable thru tests. Conditions surrounding superior pupils are given.

7. Almack, J. L. "Superior types in the high school." *Education*, 42: 1922, 352-8.

Results on 51, or 8 percent, of 776 pupils in Grades 7 to 12 at Eugene, Oregon, selected by mental tests, physical and medical examinations, and supplementary data. Ten case studies given. Conclusions given.

8. Anderson, J. E. "The intelligence of a highly selected group." *Sch. and Soc.*, 16: 1922, 723-725.

Results of Army Alpha given to the pupils of a private preparatory school for boys show them much superior to high school pupils. In general, in each year-group, 85 percent exceed the median for high school pupils of the same year-group. Practically all these pupils come from families economically and socially successful.

9. Anon. "A class of exceptional children." *Sch.*, 28: June 7, 1917, 409.

10. Anon. "Three university freshmen in knickerbockers." *Lit. Dig.*, 27: No. 7, Nov. 13, 1922, 66-69.

Biographies of Fred Santee, Herbert Hoffleit, and Edward Hardy, University prodigies, possessed of supernormal intelligence but not freaks nor 'sissies.'

11. Armentrout, W. D. "Classification and promotion of pupils." *Education*, 42: April, 1922, 506-12.

A discussion of several flexible plans. Advocates seven, eight, and nine year courses for the elementary school with classification based upon intelligence, physical and educational tests, school marks, and teachers' estimates.

12. Armentrout, W. D. "Grouping pupils by intelligence tests." *Sch. Rev.*, 28: April, 1920, 249-51.

Another account of procedure in the Lawrence, Kansas, Junior High School.

13. Averill, L. A. *Psychology for Normal Schools.* Houghton-Mifflin, Boston, 1921. 312-320.

14. Badanes, Julia E. *The First Practical Steps in Selecting Gifted Children in a Large City School.* Continental Ptg. Co., N. Y. 1921.

Brief history of testing with sociological and pedagogical significance. The aims of and the opportunities for the selection of gifted children.

15. Baer, J. A. "Individual differences among pupils. Cleveland, Ohio; *Cuyahoga County Public Schools,* 1922. 28p.

A general discussion of the individual differences that exist, followed by suggestions as to different bases and plans of classification and what the teacher can do to look after individual differences in the different subjects. This is followed by a short bibliography.

16. Bagley, W. C. "Educational determinism; or democracy and the I.Q." *Sch. and Soc.*, 15: April 8, 1922, 373-84. *Educ. Admin. and Super.*, 8: May, 1922, 257-72.

A strong plea against classifying or instructing pupils according to their I.Q.'s.

17. Bagley, W. C. "Educational determinism again: A rejoinder to Professor Whipple's reply." *Sch. and Soc.*, 16: August 5, 1922, 141-44.

A further argument against the use of intelligence test results for classifying school children.

18. Bagley, W. C. "Professor Terman's determinism: A rejoinder." *Jour. of Educ. Res.*, 6: December, 1922, 371-85.

An answer to Terman's criticism of Bagley's address on Educational Determinism.

19. Baker, A. *La Supériorité Intellectuelle et le Nevrose.* There de Madeane, Montpellier, 1921.

20. BALDWIN, BIRD T., AND STECHER, LORLE I. "Additional data from consecutive Stanford-Binet tests." *J. Educ. Psych.*, 13: Dec., 1922, 556-560.

Confirms previous findings that the I.Q. remains sufficiently constant for groups but not for individuals. The superior curves show fluctuations at adolescent ages indicative of the earlier mental development of these children.

21. BALDWIN, BIRD T., AND STECHER, LORLE I. *Mental Growth Curve of Normal and Superior Children.* (*University of Iowa Studies in Child Welfare, V. 2, No. 1.*) Iowa City: State University of Iowa, 1922. 61.

Gives the results of retests with Stanford-Binet of 143 normal and superior children of 5 to 14 years, tested from 2 to 5 times. The I.Q. curve is a practically horizontal line for both superior and normal groups and for both sexes; with increases resembling early adolescent spurts in physical-growth curves. Conclude that the present scale is not well suited to measurement of mental growth.

22. BARNARD, F. J. "Let pupils be so classified as to allow unrestricted progress or unlimited time, according to ability." *Addresses and Proceedings of the National Education Association*, 38: 1899, 163-70.

An account of the Seattle plan after it had been in operation eight years. Data are given for over 7000 pupils enrolled in four parallel tracks. The plan appears to have been successful.

23. BARTLETT, PRES., HOBART COLLEGE. "Honors plan at Hobart College." *Sch. and Soc.*, 17: June 9, 1923, 630.

Henceforth students at Hobart having exceptional mentality, initiative, and qualifications for leadership will be given a wide range of freedom. Comprehensive examinations given later. Special honors.

24. BARTON, J. W. "School organization on an objective basis." *Educ. Admin. and Super.*, 6: April, 1920, 187-97.

In Elk River, Minnesota, 323 pupils in grades one to twelve were tested with the Kansas Silent Reading and an opposites test. Thirteen percent were given extra promotion on the basis of test results and of these all but three made good. Not a single one was injured physically.

25. BATES, W. C. "*Annual Report of the School Committee and the Superintendent of Schools.*" Cambridge, Massachusetts, 1908. 45-51.

A description of the Cambridge double-track plan. Data are given for seventeen years' operation showing that on the whole the more rapidly pupils progressed through the grades the better marks they made in high school.

26. Becht, A. A. "Bright pupils and dull pupils." *J. Educ.*, 79: 1914, 395-6.

Necessity for proper diagnosis considering home and school environment, personal characteristics, and outside interests. Batavia plan helps in the administrative problem.

27. Bell, J. C. "The gifted child." *Jour. Ed. Psych.*, 11. April, 1920, 229-231.

A uniform curriculum will not suffice. Each child a potential contributor to society.

28. Bennett, H. O. "Developing leadership in the high school." *Ed.*, 43: Oct., 1922, 107-115.

29. Bennett, H. O., and Jones, B. R. "Leadership in relation to intelligence." *Sch. Rev.*, 31: Feb., 1923, 125-128.

A study of 29 pupils attending Rochester Shop School. Intelligence ratings by Otis Group Intelligence Scale compared with estimates of leadership indicate that *there is a positive correlation between intelligence and leadership.*

30. Berkhan, O. "Das Wunderkind, Christian H. Heineken." *Zeits. f. Kinderforschung*, 15: 1910, 225-229.

31. Berkhan, O. "Otto Pohler, das frühlesende Braunschweiger Kind." *Zeits, f, Kinderforschung*, 15: 1910, 166-171.

32. Berle, A. A. *Teaching in the Home.* Moffat, Yard and Co., 1915.

33. Berry, C. S. "Special classes in Michigan for mentally exceptional children." *Rept. Supt. Pub. Instr. Mich.: 1914-15*, especially 57-75.

34. Biddle, Anne E. "The superior group." *News Letter*, 17: May, 1923, 3-4.

A brief account of the grouping by ability in the high schools of a certain city during the last several years, with individual accounts of a number of bright pupils. Superior pupils were selected by the judgment of the teachers, verified by intelligence tests. The writer is heartily in favor of the plan.

35. Bliss, D. C. "The application of standard measurements to school administration." *Fifteenth Yearbook* of this Society, Part I: 1916, 69-78.

Standard tests show facts and general tendencies in a school system. Superintendent can see how effectively his plans are functioning. Montclair, N. J.

36. Boggs, Anita U. "A plea for the forward child." *The Child,* 2: Oct. 1911, 45-47.

Specific cases show that forward child is unsuited to present system. Skipping dangerous. Retardation brings misuse of energies.

37. Bolton, F. E. "Public education of exceptional children. *Educ. Rev.*, 44: 1912, 63 ff.

38. Book, W. F. *The Intelligence of High School Seniors.* Macmillan, 1922. Consult index under 'Brightest Seniors,' 'Conservation,' and 'Talent.'

39. Boston, Mass. School Committee, *Annual Reports,* 1913, 1914.

40. Branson, E. P. "An experiment in arranging high-school sections on the basis of general ability," *Journal of Educational Research,* 3: January, 1921, 53-55.

In the Long Beach, California, High School, freshmen were grouped in English according to their scores on the Otis scale. This scale appeared to select inferior pupils better than superior ones, although it was fairly efficient in both respects.

41. Breed, F. S., and Breslich, E. R. "Intelligence tests and the classification of pupils. II." *School Review,* 30: March, 1922, 210-26.

An account of an experiment in the University of Chicago High School in which it was found that Otis tests results divided pupils better than measures of their ability in arithmetic. The conclusion reached was that no test gives a reliable basis for permanent classification.

42. Brehm, J. J. "Variation in the treatment of different groups." *Ninth An. Sch. Week Proc., Univ. Penn. Bull.*, 23, No. 1, 248-252.

In the junior high school of Harrisburg pupils are grouped according to their previous records. The school is thoroughly committed to this plan.

43. Breitweiser, J. V. "The case for the gifted child." *Col. Sch. J.*, 28: April, 1913, 20-22.

44. Broadus, E. K. 1914. "Genius at school." *Atlantic Monthly.* 93: 1914, 280-283.

45. Brooks, S. S. "Some uses for intelligence tests." *Jour. Educ. Res.*, 5: March, 1922, 217-38. *Improving Schools by Standardized Tests.* Boston: Houghton Mifflin Company, 1922, 96-123.

Recommends that pupils be placed by intelligence test results rather than by those from achievement tests.

46. Brown, S. W. "Some experiments in elementary school organization." *Add. and Proc. N. E. A.*, 51: 1913, 458-463.

The chief point made is an argument for individual progress in each subject at the rate best suited to the pupil.

47. Brown, William. *The Measurement of Intelligence in School Children.* Br. Assn. for Advan. of Science, London. Report, 80: 1910.

48. Bruce, H. A. "Lightning calculators." *McClure's Mag.*, 39: 1912, 586-596. Summary in *Lit. Dig.:* Sept. 28, 1912.

Ability of numerous mathematical prodigies due to early concentration on calculation. Teachers should guard against excessive development in one field.

49. Bruce, H. A. "New ideas in child training." *Amer. Mag.*, 72: July, 1911, 286-294.

Summary of remarkable results in the education of seven well known prodigies. Advice given by their parents to others.

50. Bruce, H. A. "Story of Karl Witte." *Outlook,* 100: 1912, 211-218.

Bruce attempts to prove that Karl Witte's mental development is the result of home training. A child is not robbed of his childhood, if education is begun very early.

51. Buckingham, B. R. "Mental and physical age in relation to school administration." *J. Ed. Res.*, 1: Feb., 1920, 139-143, esp. 143.

Special provision for the gifted almost non-existent. Often they are classed with the dull. Should be freed from ordinary school training.

52. Buckingham, B. R. "Suggestions for procedure following a testing program. I, Reclassification." *Jour. of Educ. Res.*, 2: December, 1920, 787-801.

States that intelligence tests alone are not a safe guide for promotion but should be supplemented by subject-matter tests and measures of non-intellectual qualities.

53. Burk, Caroline F. "Promotion of bright and slow children." *Educ. Rev.*, 19: 1900, 296-302.

Report of the Santa Barbara flexible promotion thru A, B, and C grouping. Shortcomings of plan enumerated.

54. Burk, Frederick. "Every child a minor vs. the lockstep. A suit in equity." *Monograph C.* San Francisco State Normal School, Fresno, 1915.

A description of individual instruction in the training school for practice teachers. Each pupil goes at his own pace and promotion is made at any time.

55. Burkard, W. E. "Grouping by ability in the Robert Treat Junior High, Newark." *News Letter*, 19: April, 1921, 4-5.

In Newark there were accelerated, normal, and retarded groups in grades I-IX based on measurements by a modified form of the Binet Scale. The same course of study was followed but at different rates. The plan appears to have given satisfaction.

56. Burnell, Elizabeth F. "Instruction in mathematics for gifted pupils." *Ped. Sem.*, 24: 1917, 569-583.

Survey of schools shows lack of provision for the gifted due to lack of common objectives. Problems tabulated and suggestions made.

57. Burt, H. E., Chassell, Laura M., and Hatch, Elizabeth M. "Efficiency of instruction in unselected sections in elementary psychology compared with that in sections selected on the basis of intelligence tests." *J. Ed. Psych.*, 14: March, 1923.

58. Bush, Emma D. "An experiment in various methods of teaching bright and dull sections of the seventh grade." *J. Educ. Res.*, 8: Sept., 1923, 113-121.

Describes in detail several 'projects' and shows the differences in the ways in which these were attacked by the two sections.

59. Buswell, G. T. "The school treatment of mentally exceptional children." *El. Sch. Jour.*, 23: May, 1923, 683-693.

60. Callihan, T. W. "An experiment in the use of intelligence tests as a basis for proper grouping and promotions in the eighth grade." *El. Sch. Jour.*, 21: February, 1921, 465-69.

Almost 300 eighth-grade pupils were divided into sections according to ability. The basis was a combination of results from the Illinois General Intelligence Scale, Monroe's Silent Reading Test, and to some extent teachers' estimates and marks.

61. Cambridge, Massachusetts, School Committee. *Annual Reports*, 1908, 1910.

62. Cantley, E. "The precocious child." *The Child*, 9: August, 1919, 481-486.

Discusses physical, sexual, and mental precocity.

63. Carothers, Willis H. "The super-normal child." *Teaching*, 5: Nov., 1920, 20-27.

64. Chrisman, O. *Paidology; the Science of the Child. The Historical Child.* Boston: Badger, 1920. 471.

65. Christenson, D. H. "Changes in the course of study and school organization to meet the varying capacities of children." *Proc. N. E. A.*, 1912, 355-368.

Especial reference made to junior high-school classes for subnormal and superior children.

66. "Classification of pupils according to mentality." *The Sch. Mag.*, 3: April, 1921, 196-97.

In a Buffalo school A, B, and C groups were formed in grades VI-VIII according to the average of Otis scores, teachers' marks, and an average mark. The plan appears to have been successful.

67. "Classification of pupils in Miami, Arizona." *El. Sch. Jour.*, 22: June, 1922, 727-29.

When pupils were classified on the basis of mental tests, the number of failures was reduced and much money saved.

68. Clerk, F. E. "The Arlington plan of grouping pupils according to ability in the Arlington High School." *Sch. Rev.*, 25: 1917, 26-47.

Homogeneous grouping of pupils with possible changes every two months. Work differentiated. Claims for the plan, objections against, and results secured.

69. Clerk, F. E. "Providing for individual differences by grouping by abilities. Organization and practical working of the plan." *Eighth An. Sch. Week Proc.*, Univ. Penn. Bull., Vol. 21, No. 37, Phila.: June 18, 1921, 243.

An account of procedure in Winchester, Va., in which teachers' judgments, school marks, achievement and intelligence tests, etc., are used in placing pupils. Accelerated, normal, and slow groups are formed. Cautions given.

70. Cleveland, Elizabeth. "Detroit's experiment with gifted children." *Sch. and Soc.*, 12: September 11, 1920, 179-83.

The best five percent of seventh- and eighth-grade pupils are selected and placed in special classes. The first basis of selection was the teachers' judgment, later the Binet Tests were used, and, finally, group tests. The pupils selected gain a little time and take an enriched course.

71. Cleveland, Elizabeth. Report of Director of the Special Advanced Class. *Annual Report*, Board of Education, Detroit, Mich., 1916, 94.

72. Cleveland, Elizabeth. "Some further studies of gifted children." *Jour. Educ. Res.*, 4: Oct., 1921, 195-199.

Three 7th- and 8th-grade gifted classes in Detroit. Results as shown by comparison with a normal group.

73. Clothier, R. W. "Problems of retardation and acceleration." *Ariz. Teacher and Home J.*, 10: May, 1922, 14-19.

74. Cobb, Margaret V., and Collaborators. "The special opportunity class for gifted children." Public School 165, Manhattan. *Ungraded*, 8: March, 1923, 121-128.

75. Cole, L. W. "Prevention of the lockstep in the schools." *Sch. and Soc.*, 15: Feb. 25, 1922, 211-217.

An account of the use of the Binet, Cole and Vincent tests in the first grade. It is shown that first grade pupils are not a homogeneous group and that there is a great difference between the best and the worst entering the first grade. States that classes should be organized on a mental-age basis.

76. Collicott, J. G. "The bright pupil." *Proc. N. E. A.*, 1915, 457-462. (Discussion, 462-466.)

A discussion of special methods of providing for the exceptionally bright. Selection and classification discussed also.

77. Cooper, H. E. "Another study of retardation." *Educ. Admin. and Superv.*, 5: April, 1919, 177-183.

The experiment discussed shows that some should graduate early and others late.

78. Correspondent. "The study of gifted children." *Sch. and Soc.*, 13: June 18, 1921, 694-695.

Discussion of use of money from Commonwealth Fund (N. Y.) placed in charge of Lewis Terman to further study of the gifted. Another fund for character development and social hygiene.

79. Corson, D. B. "Classification of pupils." *Ed. Admin. and Superv.*, 6: Feb., 1920, 86-91.

80. Corson, D. B. "Ideals and accomplishments of the Newark school system." *El. Sch. Jour.*, 21: 665-677.

On page 670 is an account of Newark's special classes for gifted children.

81. Counts, G. S. "The social purpose of the education of the gifted child." *Educ. Rev.*, October, 1922, 233-244.

Importance of educating the gifted child in view of his social value. Gifted without social consciousness more dangerous than morons.

82. Court, Sophie R. A. "Self-taught arithmetic from the age of five to the age of eight." *Ped. Sem.*, 30: March, 1923, 51-68.

Tells of child who learned to calculate before he could write thru keen observation and games. A child left to his own devices will not learn properly.

85. Coy, Genevieve. "Are the following statements true?" *Sch. and Home Ed.*, 40: Sept., 1920, 10-11.

Answer to a superintendent's statement that classes for gifted children tend to make them snobbish. Cites many examples to the contrary.

86. Coy, Genevieve. *The Interests, Abilities, and Achievements of a Special Class for Gifted Children.* Teachers College Contributions, No. 131.

Statistical study of superior children segregated from high fourth and low fifth in Columbus, Ohio.

87. Coy, Genevieve. "The mentality of a gifted child." *J. Appld. Psych.*, 2: 1918, 299-307.

Record of a ten-year-old gifted child. Excellent school record. Socially and physically normal.

83. Cox, E. M. "Report of committee on promotion and rate of progress." *Superintendent's Report,* Oakland, Calif., 1917-18, 77-79.

History of acceleration, retardation, special progress, mental testing, special classes, etc., in Oakland. States that the results of special promotions and mental testing have been good.

84. Coxe, W. W. "School variation in general intelligence." *Jour. of Educ. Res.,* 4: October, 1921, 187-94.

Gives results of giving the Otis Test in twenty-four Cincinnati elementary schools as a basis for selecting pupils for a special six-year classical course. Great variation in intelligence was found.

88. Cubberley, E. P. "Promotional plans." *Public School Administration.* Boston: Houghton-Mifflin Company, 1916. 300-06.

Describes the Pueblo, Batavia, Cambridge, Mannheim, and a few other plans.

89. Cummins, R. A. "Bright and slow pupils in elementary and high school." *Jour. Ed. Psych.,* 10: Oct., 1919, 377-388.

Investigations showed no cases of bright pupils slow in the grades. Individual differences shown in various ways.

90. Davidson, H. A. "The gift of genius." *J. of Ped.,* 16: 1904, 281-297.

91. Davis, Helen. "Some problems arising in the administration of a department of measurements." *Jour. Ed. Res.,* 5: Jan., 1922, 1-20.

Methods of selecting and promoting children in Jackson, Michigan. Problems that arise and their solution.

92. Davis, Helen. "The use of intelligence tests in the classification of pupils in the public schools of Jackson, Mich." *Twenty-first Yearbook* of this Society, 1922, Part II: 136-137.

Contains an account of Jackson's acceleration classes for gifted children. See also pp. 140-141 for account of bright children in the first grade.

93. Dawson, C. D. "Classification of kindergarten children for first grade by means of the Binet scale." *Jour. of Educ. Res.,* 6: December, 1922, 412-22.

In Grand Rapids 64 percent of 2000 kindergarten children were classified in the first grade on the basis of test results. Three groups were formed. Eighteen percent had to be shifted from the original classification.

94. Deamer, Arthur. "An experiment in acceleration." Fargo, North Dakota: Board of Education, 1919, 32.

Pupils for fast sections in the upper grades were selected according to their school marks. When measured with standardized tests they showed that their achievement was satisfactory. Likewise their high-school records were good.

95. Deffenbaugh, W. S. "Current progress in schools of cities of 25,000 population or less." *U. S. Com. Ed. Rep.*, 1914, Vol. 1.

96. Dempsey, C. H. "Flexible grading and promotions." *Jour. of Educ.*, 75: April 4, 1912, 373-5.

Describes the reorganization of the system at Malden, Massachusetts, which provided opportunity for bright pupils to skip three semesters of work. Lists the principles upon which reorganization was based.

97. De Voss, J. C. "School success of gifted children." *Proceedings of the First Annual Conference on Educational Research and Guidance*, San Jose State Teachers College, Sacramento, California: State Printing Office, 1923, 34-38.

An argument to the effect that gifted children are able to carry extra work and progress more rapidly. To some extent replies to Dr. Bagley's address on educational determinism.

98. Dickson, Virgil E. "The gifted child." *Jour. Ed. Res.*, 1: April, 1920, 300-301.

Group tests and their reliability. Individual mental tests in the third grade.

99. Dickson, Virgil E. *Mental Tests and the Classroom Teacher.* World Book Co., Yonkers, 1923. Chapter IX.

100. Dickson, V. E. "The treatment of gifted children in Oakland and in Berkeley." *Proceedings of the First Annual Conference on Educational Research and Guidance,* San Jose State Teachers College. Sacramento, California: State Printing Office, 1923, 26-28.

A discussion of the basis of segregation and what should be done after segregation. Argues that children should be treated differently according to their differences in ability. Also that gifted children should not merely gain time but should also have a broader and surer foundation.

101. Dickson, Virgil E. "The use of group mental tests in the guidance of eighth grade and high-school pupils." *Jour. Educ. Res.*, 2: October, 1920, 601-610.

The experiment described explains the progress of two selected groups of eighth-grade pupils, one an "accelerated group," and the other a "regular group," who passed through the eighth-grade and first year of high school, and concludes that many children could easily be accelerated in school without endangering scholarship; and that mental capacity is a more important fact in good scholarship than is the mastery of the subjects taught in the previous grade.

102. DICKSON, V. E. "What first-grade children can do in school as related to what is shown by mental tests." *Jour. of Educ. Res.*, 2: June, 1920, 475-80.

In Oakland, California, first-grade pupils are classified in three groups on the basis of test results and school marks. Pupils with a mental age below six cannot do regular first-grade work and should be put in a special group.

103. DOLBEAR, KATHERINE. "Precocious children." *Ped. Sem.*, 19: 1912, 461-491.

Cases of precocious children of today and geniuses of the past. Physicians and psychologists see dangers involved in crowding.

104. DOOLEY, LUCILE. "Psychoanalytic studies of genius. *Amer. J. Psych.*, 27: 1916, 363-416.

Essays on the psychology of great men. Psychoanalytical literature translated from the German. An introduction to a study of genius.

105. DOTEN, WILLARD. "Tests for ability grouping." *Am. Sch. Bd. J.*, 63: October, 1921, 37-38.

The Montclair, N. J., high-school pupils were grouped according to ability from the National and Haggerty tests. The work for the groups was differentiated. Satisfactory results followed.

106. "Double promotion." *El. Sch. Jour.*, 23: January, 1923, 324-25. An editorial.

In Macomb, Mississippi, all pupils who are recommended by the teacher and have a doctor's certificate of good health, who are not below a certain age, whose previous record in school work and attendance is satisfactory, and who make certain scores upon achievement tests are given double promotion if it does not involve skipping certain subjects.

107. DOWNES, F. E. "Other special schools." *Report of the Superintendent of Schools*, Harrisburg Public Schools, 1912, 23-26.

Describes the schools for exceptionally gifted children which allow them to cover work of the eighth and ninth years in one year. States advantages of this plan and that the pupils involved do well in high school.

108. DOWNES, F. E. "Seven years with unusually gifted pupils." *Psych. Clinic,* 6: 1912, 13-17.

A summary of the Harrisburg plan for gifted children. Results compared with those of a regular class.

109. DRAKE, E. H. "Indiana schools and the bright child." *Educ. J.,* 9: Jan., 1909, 193-198.

110. DRAKE, E. H. "An interesting experiment." *El. Sch. Jour.,* 15: December, 1914, 219-222.

Discusses use of maximum and minimum assignments.

111. DUTTON, C. F. "Management of precocious children." *Clev. Med. Mag.,* 13: 1898, 143-151.

112. DVORAK, AUGUST. "Recognition of individual differences in the Junior High School." *Sch. R.,* Nov., 1922, 679-685.

113. DVORAK, H. D. "The mental tests of a superior child." *Ment. Hyg.,* 7: April, 1923, 250-257.

"Group intelligence tests for primary children may prove too easy for young children of very superior intelligence. The exceptionally superior child is so rare that when found in a school, he is often not recognized. *A priori* judgments are too readily formed by school officials and these judgments tend to persist despite conflicting objective evidence."

114. DYER, F. B. "Rapid advancement classes." *Annual Report of the Superintendent,* Boston Public Schools, 1913, 65-67.

An account of certain classes in which pupils may do three years of work in two. The plan worked well and was to be extended to other schools of the city.

115. Editorial. "Recognizing individual differences." *Elem. Sch. J.,* 21: Nov., 1920, 164-6.

Grades 1-7 divided on the basis of school records into 3 parallel sections. A is divided into 6 years of work, B into 7, C into 8. All complete the same course and prepare for high school.

116. Editorial. "Grading by means of standardized tests." *J. Educ. Res.,* 5: May, 1922, 449.

Account of such grading in the Opportunity Farm School, Cincinnati, Ohio. The psychology tests showed only four boys with an I.Q. of one hundred or better. Standard educational tests were also given. As a result of these tests, reclassification was made, which resulted in a new school spirit.

117. Eike, P. V. "The most learned boy in the world." *Amer. Mag.*, 81: March, 1916, 52.

The story of Raymond Ray, a junior in high school at the age of ten. The first six years are not "play" years. Early training not detrimental.

118. Eliot, C. W. "Educational changes needed for the war and subsequent peace." *Educ.*, 38: May, 1918, 655-658.

More physical training needed, more music, art, and laboratory work. More concrete teaching, better classification, and ethical teaching.

119. Ellis, H. A. *A Study of British Genius.* 1904.

120. Ernst, Lucy H. "Das jugendliche Genie." *VIme Congress Intern. de Psychologie*, 1910, 674-684.

121. Feingold, Gustave A. "The relation between the intelligence and the vocational choices of high school pupils." *J. Appld. Psych.*, 7: June, 1923, 143-153.

122. Feingold, Gustave A. "The sectioning of high school classes on the basis of intelligence." Reprint. *J. Educ. Admin. and Suprv.*, Oct. and Nov., 1923.

Views of teachers on the sectioning of high school classes on the basis of intellect.

123. Fisher, G. M. "Report to superintendent." *Sixty-fourth Annual Report of Schools of Worcester*, 1912, 74-75.

An account of the summer school provided for failing pupils to make up work and for bright pupils to gain time.

124. Fisher, H. A. L. "Education and genius." *Jour. N. E. A.*, 12: Dec., 1923, 415.

An English educationalist discusses the necessity of developing human eminence.

125. Fleischmann, F. "A boy prodigy and the fourth dimension." *Harper's Weekly*, 54: Jan. 15, 1910, 9.

126. Flinner, I. A. "A programme for bright pupils." *Harvard Grad. Mag.*, 31: Sept., 1922, 51-56.

Favors enrichment as against acceleration.

127. Flinner, Ira A. "Rating students on the basis of native capacity and accomplishments." *Educ. Admin. and Superv.*, Feb., 1923, 87-98.

128. Flinner, I. A. ''A special program for intellectually superior children.'' *Educ.*, 43: April, 1923, 475-480.

129. Follett, W. ''Schooling without the school.'' *Harp. Mag.*, 139: Oct., 1919, 700-708.

The typewriter as the center of early training. Schools fail because of methods poorly adapted to normal and super-normal pupils.

130. Frasier, G. W. ''The measurement of intelligence as an aid to administration.'' *Educ. Admin. and Superv.*, 6: October, 1920, 361-66.

An account of administering the Stanford Revision in Spokane and giving pupils special promotions and demotions according to the results. In general the placement of pupils was satisfactory.

131. Freeman, F. N. ''Provision in the elementary school for superior children.'' *El. Sch. Jour.*, 21: Oct., 1920, 117-131.

Questionnaire indicates that many experiments are being made to provide for superior children. Provisions are discussed.

132. French, W. C. ''A plan of organization for taking care of bright pupils.'' *El. Sch. Jour.*, October, 1923, 103-108.

Describes special courses given in a small school system by the regular teachers to 'enrich the curriculum' for the superior child.

133. Galton, F. *Hereditary Genius.* London. 1914.

134. Garrison, C. G., Burke, Agnes, and Hollingworth, Leta S. ''Psychology of a prodigious child.'' *J. Appld. Psych.*, 1: 1917, 101-110.

The case of a gifted child not manually minded. Results show that a superior child can vary from the norm. (See No. 178.)

135. Garrison, S. C., and Pullias, G. M. ''Bright children. (Mental and physical correlations.)'' *Psych. Clin.*, 14: Jan.-Feb., 1923, 259-263.

Results show that superior mentality and superior physical development go together. Examples cited.

136. Gates, A. I. ''Correlation of immediate and delayed recall.'' *J. Educ. Psych.*, 9: Nov., 1918, 489-496.

High and positive correlation exists between immediate and delayed recall. Method of testing recall determines the result.

137. Gesell, A. *Exceptional Children and Public School Policy.* Yale University Press, 1921, 66.

A report of a survey of 24,000 elementary school children in New Haven. The results of survey were used to make specific recommendations for the local situation, including treatment of gifted.

138. Gesell, A. "Mental and physical correspondence in twins." *Sci. Mon.*, 1922, 14, 305-331, 415-428.

Gives a detailed study of the mental and physical correspondence in nine-year-old twin sisters of superior intelligence who in anthropometric, educational, and psychological tests as well as dentition, development of carpal bones, skin patterns, tapping, and dynamometer tests showed marked similarities and frequent identities.

139. Gesell, A. "A psychological comparison of superior duplicate twins." *Psych. Bul.*, 19: Feb., 1922, 114-115.

Results of tests given to Olga and Orma, twins, show astonishing similarity in developmental history, personal characteristics, and test ratings.

140. Gillette, J. M. "The conservation of talent through utilization." *Sc. Mon.*, 1: 1915, 151-164.

141. Gillingham, Anna. "The bright child and the school." *J. Educ. Psych.*, 10: May-June, 1919, 237-252.

Mental tests in themselves not adequate for a complete index of the child's ability. Twenty-five cases cited. Enriched curriculum advocated instead of forced promotions.

142. Gillingham, Anna. "Educating the gifted child." *Amer. Rev.*, 1: July, 1923, 401-412.

Teaching in the Ethical Culture School, the author describes several types of gifted child in which inadequacies of personality, such as social immaturity, selfishness, etc., operate to interfere with special educational advantages. The article emphasizes the exceptional type.

143. Gillingham, Anna. "Superior children—their school progress." *J. of Educ. Psych.*, Sept., 1920, 327-347.

Studies of Gifted Children in the Ethical Culture School and their achievement in school subjects. Descriptions of individual cases.

144. Gist, A. S. "The acceleration of pupils." *Sch. and Soc.*, 5: Jan. 27, 1917, 116-118.

Investigation of the effect of shortening the pupil's elementary-school time. Many pupils can complete the required courses without injury.

145. Glass, J. M. "Classification of pupils in ability groups." *Sch. Rev.*, 28: September, 1920, 495-508.

In a Rochester junior-high school pupils were placed by results from several intelligence tests. Most of those so placed did satisfactory work but a few had to be shifted.

146. Goddard, H. H. *Human Efficiency and Levels of Intelligence.* Princ. Univ. Press, 1920. 104-105.

Possible groupings of those who test high in mental age. The highest group should be given a broader experience than the average pupil.

147. Goddard, H. H. *Psych. of the Normal and Subnormal.* New York. 1919. 216-17.

148. Goddard, H. H. "Two thousand normal children measured by the Binet measuring scale of intelligence." *Ped. Sem.*, 18: 1911, 232-259.

An experiment proving the accuracy of the Binet test and showing that the child cannot learn beyond his mental group. Discussion of the mental age of the precocious child.

149. Goldstone, G. A. "Differentiation of method in teaching reading to slow and bright pupils." *Bulletin of High Points in the Work of the High Schools of New York City*, 5: April, 1923, 11-14.

An account of an experiment in grouping high-school pupils into bright, medium, and slow groups according to the results of the Thorndike-McCall Reading Scale. After the groups were formed each was taught by a different method but with practically the same subject matter. The results were satisfactory.

150. Gordon, C. H. "Reorganization of the grammar school and a rational system of grading." *Educ.*, 21: Sept., 1900, 16-26.

An argument for two parallel courses of the same length, one of which has a richer curriculum than the other, and for the basing of promotion chiefly upon effort.

151. Gosling, F. W. "A special academic class in the junior high school." *Sch. Rev.*, 27: April, 1919, 241-255.

Class organized for gifted children ready for 7th grade. Twenty-four chosen by recommendation of principals and confirmed by psychological tests. Given 9th-grade work. Tables give results in detail. In general 14 of 20 who remained in class passed in all subjects, five failed in one, one in three.

152. Gregory, C. "Holding pupils in school." *Atlan. Educ. J.*, 2: April, 1916. *N. J. Educ. Bull.*, Dec., 1915, Part II.

153. Groszmann, M. P. E. "Care of exceptionally bright children." *Educational Foundations*, 26: June, 1915, 587-592. (Also *Med. Rev. of Reviews*, 21: 1915, 212-214. *Sci. Amer. Sup.*, 80: Sept. 11, 1915, 171. *Mind and Body*, 2: Feb., 1915, 508 ff.

154. Groszmann, M. P. E. *The Exceptional Child.* New York. 1917. Especially Ch. VII.

Showing that the superior child receives less attention than the feebleminded. Chapter VII is devoted to the psychology of exceptionally bright children. Four groups of these children are classified and discussed.

155. Groszmann, M. P. E. "The exceptionally bright child." *Proc. Nat. Assoc. Study and Educ. Exceptional Children.* April, 1910, 103-133.

156. Groszmann, M. P. E. *A Parent's Manual. I, Child Problems, Mental and Moral.* Century Co., 1923. 156-158, 164-170.

Risk in skipping a grade. Dangers of precocity. Gifted children need very wise guidance.

157. "Grouping pupils on the basis of ability." The First of a *Series of Surveys of the Dept. of Instruction,* Cleveland Public Schools, Board of Education, Cleveland, Ohio, 18-21.

In the first and seventh grades pupils were classified chiefly according to results from the Pressey Primer and Illinois scales, respectively.

158. Grove, C. C. Review of Terman's "The measurement of Intelligence." *Ed. Rev.*, 56: June, 1918, 79.

159. Gruenberg, B. C. *Outlines of Child Study.* Macmillan, 1923. 213-217.

Emphasizes dangers of segregation of gifted children. Gives a suggestive outline for the study of such children.

160. Guthrie, L. G. "Contributions from history and literature to the study of precocious children." *Lancet*, 173: 1907, 1592-6.

161. Haggerty, M. E. "Specific uses of measurements in the solution of school problems." *Seventeenth Yearbook* of this Society, 1918, Part II, 25-40.

Results of a questionnaire seeking to know changes in school procedure and organization after using standardized tests. Tests show enormous range of individual differences.

162. Hamilton, R. L. "Undeveloped resources." (Some studies in group intelligence in Sioux City High School.) *Sch. and Soc.,* 16: 1922, 416-422.

Seventy-five percent of superior students are not making full use of their capacity.

163. Hanson, W. A. "Mental measurement and the special class system in New London, Connecticut." *Am. Sch. Board Jour.,* 63: September, 1921, 37-119.

Twenty-seven hundred children were tested with the Dearborn and Haggerty Tests. Special classes were formed and the results also used to guide teachers in their instruction. In some cases individual tests were given.

164. Hardesty, Annie H. "Teaching my boys at home." *Ladies' World:* Jan., 1916, 12.

165. Harley, H. L. "Physical status of the special class for bright children at the University of Pennsylvania summer session, 1912." *Psych. Clin.,* 7: March, 1913, 20-23.

Study to determine the results of school lunches, rest periods, etc. Shows that schools can foster physical improvements as well as mental.

166. Harris, W. T. "Class intervals in the graded schools." *Proc. N. E. A.,* 1900, 332-340.

Discusses the desirability of frequent promotion of individual students. By this sifting process over-crowded rooms of the less skilled teachers are relieved.

167. Harrisburg, Pa., School Committee. *Annual Report.* 1912.

168. Hartwell, C. S. "The grading and promotion of pupils." *Ed. Rev.,* 40: November, 1910, 375-86. Addresses and Proceedings of the National Education Association, 48: 1910, 249-306.

An argument for flexible organization and promotion by subjects. The results of a questionnaire are given showing more favorable sentiment on these points than existed several years previously. It is also stated that bright and dull pupils should be given individual attention.

169. Harvard Alumni Bulletin. "Education from the inside." *Sch. and Soc.*, 17: June 9, 1923, 637.

A short report of the plan in Harvard and Princeton to encourage self-education.

170. Hatch, W. E. *et al.* "Provisions for exceptional children in the public schools." *Addresses and Proceedings of the National Education Association*, 45: 1907, 360-63.

Rather brief discussion of several of the plans.

171. Hehir, Sir Patrick. "Quest of the embryonic genius." *Nineteenth Century*, 92: Oct., 1922, 600-609.

Discusses value of intelligence tests in discovering genius. Recommends special classes for gifted. Treats of conditions in England.

172. Henry, T. S. "Classroom problems in the education of gifted children." *Nineteenth Yearbook* of this Society. 1920.

Chief problem that of adapting new methods. There should be less drill, less explanation, use of initiative, principles instead of details. No peculiar problems of discipline encountered. (See also references to Whipple and to Coy.)

173. Hill, D. S. *Notes on the Problems of Extreme Individual Differences in Children of the Public Schools*, New Orleans, 1913. Especially 67-72.

174. Hirsch, W. *Genius and Degeneration.* New York. 1896.

175. Hirt, Zoe I. "A gifted child." *Tr. Sch. Bull.*, 19: June, 1922, 49-54.

Case study of an eight-year-old girl with an I.Q. of 188, doing sixth-grade work in the school.

176. Hische, W. "Die Auslese der Begabtung in Hanover." *Praktische Psychol.*, 2: 1921, 129-142. (Abstracted in *Psy. Bull.*, 19 :54).

177. Hollingworth, Leta S. *The Psychology of Subnormal Children.* Macmillan, 1920. 8, 68, 234-235.

Superior children are reported as having physical defects as well as subnormals. The relation of physical defects to the range of intelligence is almost unknown.

178. Hollingworth, Leta; Garrison, Charlotte; and Burke, Agnes. "Subsequent history of E——, five years after the initial report." *J. Appl. Psych.*, 6: June, 1922, 205-210.

A sequel to the article by Garrison, Burke, and Hollingworth in the same journal, 1: 1917, 101-110, entitled "The psychology of a prodigious child." The case is said by the authors to deviate 11 P.E. from the average child. (See No. 134)

179. HOLMES, H. W. "The general philosophy of grading and promotion in relation to intelligence testing." *Sch. and Soc.*, 15: April, 29. 1922, 457-461.

The author strongly opposes rapid advancement of gifted pupils, although he considers it preferable to dull hours. He advocates enriched curriculum.

180. HOLMES, H. W. "Intelligence tests and individual progress in school work." *Twenty-first Yearbook* of this Society, 1922, Part II, 117-122.

A plea for increased attention to social, moral, and physical development. Enriched programs are advocated as opposed to rapid advancement of superior children.

181. HOLMES, W. H. "Plans for classification in the public schools." *Ped. Sem.*, 18: 1911, 475-502.

An exposition of three plans of individual instruction—Pueblo, Batavia, and Newton. A brief description of other plans of grading and instruction which have gained prominence.

182. HOLMES, W. H. "Promotion classes for gifted pupils." *J. of Educ.*, 75: 1912, 376-379.

A comparison of the 'Constant Group' and the 'Shifting Group' plans for providing for individual differences in pupils. The superior value of the 'Shifting' plan is shown.

183. HOLMES, W. H. *School Organization and the Individual Child.* Davis Press, Worcester, Mass. 1912, 211.

184. HOOD, WILLIAM R. The Exceptionally Capable Child. In U. S. Bureau of Educ. *Report*, 1911, I, 143.

185. HORN, J. L. "Caring for highly endowed pupils." *Sch. Rev.*, 29: December, 1921, 776-781.

The report of the Oakland, Cal., plan to determine to what extent superior children are being neglected. Four specific cases are cited. Adjustments of curricula have improved the holding power of the schools.

186. HOWERTH, IRA. "Universal education and the increase of genius." *Ed. Rev.*, 63: January, 1922, 50-56.

A disciple of Lester F. Ward.

The author states that the chances of success for a wealthy person are three times as great as for a poor person of the same native ability. He says that schools should afford an education to all classes of people and not concentrate on a few.

187. Hughes, W. H. "Provisions for individual differences in high-school organization and administration." *Jour. Educ. Res.*, 5: January, 1922, 62-71.

Homogeneous grouping may not be desirable in some communities. Abuse of supervised study and variety of pupil capacities are discussed fully.

188. Hughes, W. H. "Standardizing procedure in a combination system of supervised study, varying scope of work, and weighted credit." *Jour. Educ. Res.*, 2: Sept., 1920, 547-556.

The scheme provides for a specific statement in each school subject of the scope and quality of work which a student of average ability should be able to accomplish, an enumeration of additional work and characteristics necessary to attain extra units of credit, also provisions for diminished credit for inferior work, and directions to the student of extraordinary ability for carrying on an original piece of work.

189. Hunter, F. N. "Report of the superintendent of schools for the year 1917-18." Oakland, California: Board of Education, 1919, 353.

Contains considerable discussion of the Otis and Simon-Binet Tests, flexible promotion, etc.

190. Huth, A. "Förderung der Begabtung durch Gruppenunterricht." *Deutsche Schule*, 25: 1921, 152-161. Abstracted in *Psy. Bull.*, 19:158.

191. "Intelligence tests as a basis for homogeneous grouping at Xenia, Ohio." *Am. Sch. Board Jour.*, 64: March, 1922, 75-76.

Three groups were made up of seventh- and eighth-grade pupils on the basis of the Haggerty and Terman Tests. They were regrouped later as was necessary but in most cases stayed in the same group.

192. Irving, M. Louise. "Classification into ability groups in Santa Rosa." *Jour. of Educ. Res.*, 6: November, 1922, 362-64.

In the junior high school of Santa Rosa classification is based upon two or three intelligence tests and several achievement tests.

193. Irwin, Elizabeth. "Measuring the child's intelligence." *Delin.*, 97, No. 3: Oct., 1920, 39, 69.

194. Izant, G. G. Do spare time activities make for school progress? *Educ. Rev.*, 42: Oct., 1921, 239-42.

Intensive study of 200 Cleveland children: 50 retarded 2 years, 50 accelerated 2 years, 100 in normal grade. The accelerated children differed in their choice of recreations, reading, music, and athletics; while the retarded indulged in making things, hiking, pool playing, and killing time.

195. Jahrling, Robert. ''Educating gifted children in Hamburg.'' *Ped. Sem.*, 30: March, 1923, 35-39.

Describes method of selecting the 900 most gifted children from the 20,000 of the fourth year of the Hamburg schools, to be admitted to classes for special training leading to professions and higher vocations.

196. Johnson, O. J. ''Classes for gifted pupils in summer school.'' *Jour. Educ. Res.*, 5: Jan., 1922, 85-86.

Ninety-five out of 140 pupils selected from the upper fifth of all classes by means of intelligence tests attended summer school and completed a semester's work. The results of the experiment are given.

197. Johnson, O. J. ''Relative achievements of dull and bright pupils.'' *Jour. Ed. Res.*, 7: May, 1923, 459-460.

The relative achievements show that there is a measurable difference between slow and bright classes. The advantage is with the slower or dull classes. Bright pupils need to be stimulated to a more complete mastery of their studies.

198. Johnson, O. J. ''Solving the problems of gifted children by means of the special class.'' *Am. Sch. Board Jour.*, 67: Nov. 1923, No. 5, 41-43.

Discusses work of such classes in the St. Paul system. Special classes for gifted children give them the opportunity to advance rapidly until they reach the grade normal for their mental age, make it possible to remove deficiencies in their achievement much more effectively, etc.; and save time and to some extent money.

199. Johnson, O. J. Teachers' judgments of qualities of gifted St. Paul pupils as related to classroom activities. *Sch. & Soc.*, 17: Apr. 28, 1923, 466-69.

Discusses satisfactory results in special classes for gifted pupils at St. Paul, Minn.

200. Johnson, O. J. Teachers' reports on Alpha classes. *Sch. Bull. of the Dept. Ed. of the City of St. Paul.* Vol. 6, No. 1. Oct. 1922.

201. JONES, ALICE M. "The superior child." *Psy. Clin.*, 15: March-April, 1923, 1-8: May-June, 116-123.

Extensive reports of 8 cases showing the enormous range of differences among superior children. The writer gives their mental and physical characteristics as well as a prognosis of success.

202. JONES, C. T. "Suggestive plan for the study of very bright children." *J. of Educ.*, 85: March, 1917, 290-292.

Part two of this article deals with experimental studies that might be made in regard to the school education of the supernormal child.

203. JONES, C. T. "Very bright and feeble-minded children." (A study of qualitative differences.) *Tr. Sch. Bull.*, 16: Dec., 1919, 137-141: Jan., 1920, 153-164.

204. JONES, E. E. "Suggestions from cases of unusually rapid or irregular progress in public schools." *Proc. N. E. A.*, 1912, 640-645.

This is a statistical study based upon 257 cases classified into seven groups and ranked by the number of years consumed in the course and by the character of the work done. The course of study is analyzed from the sex standpoint.

205. JORDAN, R. H. "An example of classification by group tests." *Educ. Admin. and Superv.*, 6: April, 1920, 198-201.

In a Minnesota grade school the seventh- and eighth-year pupils were tested with several mental tests. Those above the 75 percentile of the next higher class were considered for extra promotion, those below the 25 percentile of the next lower class for failure or demotion.

206. *Journal of Educational Research*, 7: March, 1923, 265.

In Painesville, Ohio, seventh- and eighth-grade pupils are grouped according to the Illinois Examination results. The sub-normal of these grades are promoted on the basis of their effort.

207. *Journal of Educational Research*, 7: May, 1923, 454.

A brief account of the reclassification of pupils in grades V-VIII on the basis of scores upon the National Group Intelligence Test, teachers' marks, and the time devoted to home work. Such changes in the original classification as seemed necessary were made. The plan seems to have been successful.

208. *Journal of Educational Research*, 7: May, 1923, 456-57.

In Miami, Arizona, results from the Otis and National Group Intelligence Tests are used to determine the I.Q.'s of the pupils for the purpose of group-

ing. Each teacher handles two sections of different ability, the average and the dull. Extra promotions are given to take care of the brighter pupils. The failure rate has been decreased very markedly while results of standardized tests show that achievement has not been lowered.

209. Kallom, Arthur W. "Intelligence tests and the classroom teacher." *J. Educ. Res.*, 5: May, 1922, 389 ff.

Kallom urges that pupils be divided within the grade on the basis of their mental ability as determined by group intelligence tests, supplemented by individual tests.

210. Kearney, Julia F. "Teaching and following-up supernormal children in a small public school." *Jour. Educ. Res.*, 7: Feb., 1923, 145-148.

Describes the enrichment of the curriculum for a class of 27 boys of high I.Q. in a New York public school.

211. Keener, E. E. "The use of measurements in a small city school system." *Jour. of Educ. Res.*, 3: March, 1921, 201-06.

This article mentions a few instances of readjustment in school based upon test results. The averages given are from the Richmond, Indiana, schools.

212. Kendall, C. N. "Modifications in organization necessary to secure suitable recognition of pupils of varying ability." *Proc. N. E. A.*, 1908, 147-152.

Segregation of superior children involves placing under a strong teacher, and consideration of college and vocational groups. It involves consideration of teacher's judgment, immaturity of children, desires of parents, and expense.

213. Kerrigan, Agnes. "The gifted child." *Journal N. E.A.*, 11: 1922, 352 ff.

214. Ketner, Sarah P. "Grouping by standardized tests for instructional purposes." *Jour. of Educ. Res.*, 2: October, 1920, 620-25.

A Denver school grouped pupils in reading, arithmetic, and penmanship according to the results of tests. The experiment seemed to be successful and the plan was to be extended to other schools.

215. Kiernan, J. J. "Is genius a sport, a neurosis, or a child potentially developed?" *Alienist and Neurologist*, 36: 1915, 165-236, ff.

216. Kohs, S. C. "The man of genius." *Sch. and Soc.*, 17: April 21, 1923, 429-431.

217. Kolbe, P. R. "Problem of the competent." *Sch. and Soc.*, 3: March 11, 1916, 378-380.

Discusses the present neglect of the exceptional student. Ways of reform discussed. Certain sections should be reserved for the competent student.

218. Kyte, George C. "An experiment in the education of gifted children in the first grade." In Technique of Supervision by the Elementary School Principal. *First Yearbook of the Dept. of Elem. Sch. Prin., N. E. A.*, 1922, Chapter V, 71, ff.

219. Laird, D. A. "Educating the superior child." *Yale Rev.*, 11: March, 1922, 546-555.

220. Lang, A. "Genius in children." *N. Amer. Rev.*, 165: January, 1897.

221. Layton, W. K. "The group intelligence testing program of the Detroit Public Schools." *Twenty-first Yearbook* of this Society, Part II: 1922, 123-130.

A report of the X, Y, Z plan of classification used in Detroit; the tests given, the scores, letter ratings, and the work of the psychological clinic.

222. Lee, J. B. "Breaking the lock step in our schools." *Educ. Rev.*, 56: Sept., 1918, 149-157.

An experiment to give superior boys an opportunity for full development. The lessons learned by the experimenters are of value to anyone establishing gifted classes.

223. Lindley, E. H., and Bryan, W. L. "An arithmetical prodigy." *Psych. Rev.*, 7: 1900, 135 ff.

Arthur Griffith's scope, tenacity of memory, and rapidity among the best ever recorded. Capacity depends upon number relations committed to memory, and upon short-cuts.

224. Lipsky, A. "School guidance by mental tests." *Sch. and Soc.*, 3: 320-24.

225. Littwin, M. F. "English 'star' classes at the Boys' High School." *Bulletin of High Points in the Work of the High Schools of New York City*, 5: March, 1923, 4-7.

On the basis of school marks special sections were formed in the sixth, seventh, and eighth semesters of high school. These sections were given differentiated and enriched work in English. A number of advantages were derived from the plan.

226. Lobsien, M. "Untersuchungen über die Befähigung sum Erlernen der Fremdsprache." *Praktische Psych.*, 4: 1922, 33-44. Abstract in *Psy. Bull.*, 20: 313.

227. Louisville, Ky., Board of Education. *Sixth Report:* 1917, especially 40-44, 81.

228. Lowell, F., and Woodrow, H. "Some data on anatomical age and its relation to intelligence." *Ped. Sem.*, 29: 1922, 3-15.

Lowell and Woodrow, in a study of 402 children, found a positive but low correlation between dentition, intelligence, and development of carpal bones.

229. Lynch, Ella J. "The bright child." *Psych. Clin.*, 4: 1910, 141-144.

Discussion of the need of establishing a school for the bright child. The plan includes no home work, and not more than six pupils for each teacher.

230. McCall, W. A. *How to Measure in Education.* Macmillan, 1922. 62-66, 187-189.

Answers common objections to special classes for gifted children. Discusses vocational guidance for such children.

231. McDonald, R. A. F. *Adjustment of School Organization to Various Population Groups.* Teachers Coll. Contrib. to Educ., No. 75: 1915. Especially Ch. XI.

232. MacPhail, A. H. "The correlation between the I.Q. and the A.Q." *Sch. and Soc.*, 16: Nov. 18, 1922, 586-588.

Superior children are not working up to their capacity. Report of projects carried out under Colvin. Elementary standards now suited to the slower pupils.

233. Macmillan, D. P. "The discovery and training of exceptionally bright children." *The Child in the City:* 1912, 203-212.

234. Madsen, I. N. "Group intelligence tests as a means of prognosis in High School. *J. Educ. Res.*, 3: Jan., 1921, 43-52.

235. Madsen, I. N. "Relation between general intelligence and success in certain high school subjects. *J. Educ. Res.*, 3: May, 1921, 396-398.

A comparison of students in commercial and traditional high schools in Omaha. It appears that differences in degree of intelligence are required for success for different subjects. Classical subjects are at the top, vocational subjects toward the bottom.

236. MAENNEL, B. *The Auxiliary Schools of Germany.* (Eng. trans. *Bull. U. S. Bureau Educ.*, 1907, No. 3.)

237. MALLORY, J. N. "A study of the relation of some of the defects to the achievement in the elementary school. George Peabody Coll. for Teachers. *Contributions to Education.* No. 9, 1922, 78.

Mallory from a survey of the elementary grades in Humboldt, Tenn., concludes that physical defects are directly associated with low scores in school and ranks defects as to degree of handicap: (1) nasal obstruction; (2) defective teeth; (3) defective hearing; (4) defective tonsils; (5) and very slightly defective eyesight.

238. MARSHALL, JESSICA. "Using the results of testing." The Technique of Supervision by the Elementary Principal. *The First Yearbook of the Dept. of El. Sch. Prins.* Washington: National Education Association, May, 1922, 49-55.

An account of the use of tests for purposes of placing pupils in a Toledo school. In the lower grades classification was chiefly according to the results of various intelligence tests, in the upper grades according to those from achievement tests.

239. MERIAM, J. L. *A Child's Life and the Curriculum.* Yonkers-on-Hudson. World Book: 1920. xii, 538.

240. MEYER, ADOLPH. "Berlin schools for gifted children." *Ped. Sem.*, 30: Sept., 1923, 205-210.

A report of gifted classes in Berlin. Intelligence tests given to aid in selection. Certain cautions given concerning the avoidance of snobbishness.

241. MILLARD, B. "Precocity and genius." *Bookman,* 42: Nov., 1915, 340-345.

Exploitation of child wonders. Modern eugenists account for precocity in parents' age at time children are born. Many cases of geniuses given.

242. MILLER, C. A. "The study of exceptional children." *Proc. N. E. A.*, 1908, 957-963, especially 958-9.

Marked variation from the average indicates the exceptional child. The Baltimore plan discussed.

243. MILLER, G. A. "Mathematical prodigies." *Science,* 26: Nov. 8, 1907, 628 ff.

Mathematical precocity requires neither mental ability nor cultured surroundings. The versatile prodigy comes from proper home conditions. Such a child must have genuine mental ability.

244. Miller, W. S. "General intelligence tests." *Sch. Rv.*, 28: Feb., 1920, 94.

A brief statement that the Univ. of Minn. High School has been classifying entering students according to mental test results with a list of favorable results. Highest correlation between mental test results and achievement is in mathematics and science.

245. Mitchell, D. "Psychological examination of pre-school age children." *Sch. and Soc.*, 15: May 20, 1922, 561-568.

The experiment described shows a wide variability in native capacity. Difficulties to be overcome, because the intelligence quotient is but a beginning. The present curriculum must be modified.

246. Mitchell, David. "Schools and classes for exceptional children." *Educational Survey. Cleveland, Ohio:* Cleveland Foundation, 1916. 122.

Discusses provisions for ten classes of exceptional children in Cleveland. Bright children are not included in those provided for.

247. Mitchell, F. D. "Mathematical prodigies." *Sc.*, 26: Nov. 8, 1907, 628 ff.

Contains a summary concerning mathematical prodigies and an account of the methods of calculation used by the author. He states that skill in mental calculations is independent of general education.

248. Monroe, W. S. *Measuring the Results of Teaching.* Houghton Mifflin, 1918. 128.

In tool subjects too much training can be given. Before giving individual instruction secure information by means of intelligence tests.

249. Montgomery, E. W. "Group tests for intelligence in the Bedford (Indiana) schools," Sixth Conference on Educational Measurements, *Bull. Exten. Div.*, Vol. 5, No. 1. Bloomington: Indiana University, 1919, 54-55.

The Binet-Simon Test was used to select pupils for special classes. In addition group tests were used in high school as the basis of organizing fast sections.

250. Morrison, J. C. "The supervisor's use of standard tests of efficiency." *Elem. Sch. J.:* January, 1917.

251. Mudge, E. L. "The superior girl in early adolescence." *Ped. Sem.*, 30: March, 1923, 45-47.

The author discusses the leadership that ought to be exercised by the superior girl. Superior girls have a substantial attitude towards life.

252. MULFORD, H. J. "The human mind." A suggestion as to the constitution of normal, subnormal, and supernormal mind. *Amer. J. Psych.*, 29: July, 1918, 272-290.

He discusses the three phases of mind in relation to time: the normal mind represents present time; the sub-normal mind represents the past; the super-normal mind represents the future. Interesting discussion of what mind may become.

253. MULREY, CORA L. "The rapid advancement class." *Educ. Adm. and Superv.*, 3: 1917, 416-419.

The pupils discussed were selected because of mental, moral, and physical leadership. Curriculum enriched. These classes are discussed as individual and community assets.

254. MURRAY, E. P., and SMITH, H. O. *The Child Under Eight.* New York: Longmans, Green, 1919.

255. MYERS, G. C. "Broadening the course of study for the brighter children." *Educ. Adm. and Superv.*, 3: Jan., 1917, 33-37.

The plan in Carthage, N. Y., is to enrich curricula in history, English, civics, geography, and science. Possible objections to this scheme stated and answered.

256. MYERS, G. C. "Intelligence classification and mental hygiene." *Ped. Sem.*, 28: June, 1921, 156-60.

An argument for complete mental surveys of school systems.

257. MYERS, G. C. "Training for leadership." *Sch. and Soc.*, 17: April 21, 1923, 437-439.

258. MYERS, CAROLINE, and MYERS, G. C. *Measuring minds.* Newson and Co., New York. 1921, 39-40.

The chief service of intelligence tests is to find ability which a teacher is not likely to discover. A bright child may be listless or indifferent due to the teacher's failure to classify him early.

259. MYERS, C. E., MYERS, G. C., and LAYTON, S. H. "Group mental testing in Altoona, Penn." *Sch. and Soc.*, 13: March 28, 1921, 624-628.

The Myers' Mental Measure was used. It was recommended that special classes for sub-normal and super-normal children be formed; that several parallel courses be organized; that pupils be classified according to their I.Q.'s and school marks, etc. into four groups in each grade.

260. Naccarati, S. "The morphologic aspect of intelligence." *Arch. of Psychol.*, 27: 1921, 1-44.

261. Naccarati, S., and Guinzberg, R. L. "Hormones and intelligence." *J. of Appl. Psych.*, 6: 1922, 221-234.

Naccarati and Guinzberg find a positive correlation between intelligence and ratio of height to weight in three groups of university students.

262. "Negaunee adopts modified plan of grouping pupils according to ability." *Mich. Educ. Jour.*, 1: Dec., 1923, 147-149.

Describes plan worked out in Negaunee, Michigan, schools.

263. Neverman, P. F. "New Richmond plan of grade promotion." *Amer. Sch. Bd. J.*, 54: Jan., 1917, 38.

264. Newton, Mass., School Committee, *Annual Report*, 1913.

265. Nichols, M. L. "The teaching of science to classes divided according to ability." *Ninth Annual Schoolmen's Week Proceedings*, University of Pennsylvania, Vol. 23, No. 1, 324-26.

In the South Philadelphia High School for Girls science classes were divided according to results of intelligence tests. Different methods of teaching were used in the different sections.

266. Norsworthy, Naomi. "Acquisition as related to retention." *J. Educ. Psych.*, 3: 1912, 214-218.

267. Norsworthy, Naomi, and Whitley, Mary T. *The Psychology of Childhood.* New York: 1918, 328-333.

268. Odell, C. W. "The double track system in a small school." *El. Sch. J.*, 22: Mar., 1922, 544-6.

Grades divided into A and B sections. Divisions not fixed. Plan in use in a typical consolidated school.

269. Odell, Charles W. *The Uses of Intelligence Tests as a Basis of School Organization and Instruction.* Univ. of Illinois Bull., Vol. 20, No. 17; Bureau of Educational Research Bull., No. 12, December 25, 1922, especially Chapter V.

The chapter gives some experimental evidence as to advantages gained by bright pupils in placing them in 'fast' sections.

270. Olerich, H. "Das wunderliche Viola Rosalia Olerich." *Körperliche Erziehung*, 9: 1913, 323-329.

271. Olerich, H. "The cleverest child in the world." *Strand Mag.*, 20: 1900, 130-136. (Review in *Ped. Sem.*, 7: 1900, 455.)

Viola Olerich, considered one of the most advanced juvenile pupils on record, adopted by Prof. Olerich to test a new theory of education. A summary of accomplishments given.

272. Omaha, Neb. Omaha's experiment in acceleration of school children. Omaha Public Schools, *Official Publication*, Nov., 1919.

273. Omans, A. C. "Provisions for ability grouping in junior and senior high school." *Am. Sch. Board J.*, 45: Oct., 1922, 55-58, 138.

Gives data as to provisions for ability grouping in 50 schools. Concludes that such grouping is beneficial and the course for the gifted should be broadened. The basis of classification should be intelligence ratings, checked by teachers' judgment, and standardized educational tests.

274. Omans, Mr. and Mrs. L. R. "An interesting school experiment." *Am. Schoolmaster*, 13: 126-131.

An experiment in a special class for gifted children at Ypsilanti, Mich. The class successfully completed 8th grade in one semester.

275. O'Shea, M. V. "Popular misconceptions concerning precocity in children." *Sci.*, 34: 1911, 666-674.

The author says that modern intellectual prodigies give us no new view of human nature nor of education. They do indicate what may be achieved.

276. O'Shea, M. V. "What Mrs. Stoner did for her child." *McClure's Mag.*, 45: July, 1915, 38-39, 76-77.

An account of the teaching and accomplishments of Winifred Stoner. The first five years are the most fruitful for education, provided proper methods are used. Play, keen observation, and concentration needed.

277. Ostwald, W. *Grosse Männer.* Liepzig. 1909.

278. Parker, S. C. *General Methods of Teaching in Elementary Schools*: Ch. XL. Ginn & Co.

279. Parkinson, W. D. "Promotions, accelerated and retarded." *Educ.*, 19: November, 1898, 152-57.

An argument that there is some advantage in the inertia of the graded system and that only a comparatively few pupils should be accelerated and retarded.

280. Patterson, M. Rose. "The Homewood demonstration school at Johns Hopkins University." *Sch. and Soc.*, 16: Nov. 18, 1922, 577-84.

An account of an experiment in which a number of pupils did five months work in two. Especially the underage pupils succeeded in doing the extra work.

281. Patterson, M. Rose. "A preparatory center in Baltimore, William Rinehart School, No. 52." *Atlan. Educ. J.*, 12: 1917, 234-238.

282. Pearson, K. *The Relationship of Health to the Psychical and Physical Characters of School Children.* Drapers Co. Research Memoirs. Studies in National Deterioration, 4. Cambridge Univ. Press. 1923.

Pearson from the examination of 2388 boys and 2290 girls finds some correlation between health and intelligence both of which change little if any throughout school life. He has recently published a book on the relationship of health to the psychical and physical characters of school children.

283. Pearson, P. H. "German schools for gifted pupils." *Sch. Life*, 5, No. 3: Aug. 1, 1920, 5-6.

284. Pechstein, L. A. "From him that hath brains." *Educ. Rev.*, 66: June, 1923, 4-6.

Mental tests and educational measurements are good when they are individualized enough to locate individual elements of weakness or power. Poor pupils often over-stimulated, the gifted under-stimulated.

285. Perrin, H. A. "The exceptional child." *Sch. News and Prac. Ed.*, 34: Jan., 1921, 302-305.

Discusses treatment of accelerates.

286. Peter, R., and Stern, W. "Die Auslese befähigter Volkschüler in Hamburg." *Hamburger Arbeiten zur Begabungsforschung*, Nr. 1., Beiheft 18. *Zeits. f. angew, Psychol.*, 2 Auf., 1922. Abstracted in *Psych. Bull.*, 19:293.

287. Peter, R., and Stern, W. *Die Auslese befähigter Volkschueler in Hamburg.* Leipzig. Barth. 1921.

288. Petzoldt, J. "Sonderschulen f. hervorragend Befähigte." *Neue Jahrbücher f. Päd.*, 14: 1904, 425-456.

289. Petzoldt, J. "Drei Thesen über Sonderschulen f. hervorragend Befähigte." *Arbeiten des Bund f. Schulreform*, Nr. 5: 68-74.

290. PETZOLDT, J. "Die Einwände gegen Sonderschulen f. hervorragend Befähigte." *Neue Jahrbücher f. Päd.*, 28: 1911, 1-24.

291. PINTNER, R. "Brightest children are the most retarded." *Sch. Life*, 6: No. 5, March, 1921, 5.

This is a study of 4215 cases showing that bright pupils are more apt to be educationally retarded than the dull. Pintner's mental and educational survey evaluates attainment in mental terms.

292. PINTNER, R. *Intelligence Testing, Methods, and Results.* Holt. 1923. Ch. IX.

293. PINTNER, R. "The significance of intelligence testing in the elementary school." *Twenty-first Yearbook* of this Society, Part II: 1922, 153-167, esp. 155-158.

Describes Coy's experiment at Columbus, O.

294. PINTNER, R., and NOBLE, H. "The classification of school children according to mental age." *Jour. Educ. Res.*, 2: November, 1920, 713-28.

About 5000 pupils in a Columbus, Ohio, school were tested with the Stanford Revision. Fifteen percent were either given extra promotion or demoted. Special classes and an ungraded class were formed; acceleration and retardation were both reduced; discipline, work, and interest were bettered.

295. PIORKOWSKI, C. "The principles of selection in the Berlin examination for children of conspicuous talent." *Praktische Psychol.*, 2: 1921, 186-188.

A plan for furnishing special educational opportunities to the children of the common schools whereby, annually, 150 pupils, who are recommended by their teachers, are given a psychological examination. The choice is based upon the combined results of scholastic standing, personality, and success in the tests—with special reference to conspicuous superiority in any one of the three phases.

296. PRESSEY, S. L. "A systematic plan for selecting sub-normal and super-normal children in the public schools." Fifth Conference on Educational Measurements, *Bulletin of the Extension Division, Vol. 4, No. 4.* Bloomington: Indiana University, 1918, 92-99.

Recommends that a group test be used first and then the Stanford Revision.

297. Pressey, S. L., and Pressey, L. W. "The practical efficiency of a group scale of intelligence." *J. Applied Psych.*, 3: March, 1919, 68-80.

Gives results of tests given to Dr. Helen Race's experimental group of gifted children at Louisville, Ky. (See No. 309.)

298. Price, E. D. "The Enid plan of classification of pupils according to mental ability." *Enid, Okla., Bd. of Educ.:* 1921, 12.

Elementary pupils were grouped into three groups according to teachers' opinions. The superior and inferior groups were also tested by the Terman test, the results of which usually verified the teachers' judgments.

299. Proctor, W. M. *Psychological Tests and Guidance of High School Pupils.* J. of Educ. Res. Monographs, No. 1. Bloomington: Public School Publishing Co., June, 1921, 70.

Believes that in the guidance of pupils mental tests may be used along with teachers' estimates of ability, records of school success, and vocational ambitions of the pupil. Suggestions are mainly negative.

300. Proctor, W. M. "The use of psychological tests in the educational guidance of high-school pupils." *Jr. Educ. Res.*, 1: May, 1920, 369-381, esp. 372-373.

An experiment showing the value of mental tests for prognosis. Specific cases cited. Comparisons made between a guided and an unguided group.

301. Proctor, W. M. "The use of psychological tests in the vocational guidance of high-school pupils." *Jour. of Educ. Res.*, 2: September, 1920, 533-46.

A discussion of the occupational levels of intelligence as found by testing in the army, the vocational choices of high-school pupils, and the connection between the two. States that pupils should be guided out of vocations that require a greater degree of intelligence than they possess.

302. "Provision for exceptional pupils in Oakland." *Sch. and Soc.*, 14: July 16, 1921, 30-31.

Gives data as to the number of special classes and special promotions for exceptional pupils.

303. "Pupils classified by mental tests." *Sch. Life*, 12: February 1, 1921, 13.

An account of reclassification of pupils in the W. T. Harris school of New York City by group tests.

304. Pyle, W. H. "A psychological study of bright and dull pupils." *J. Educ. Psych.*, 6: 1915, 151-156.

Discusses the discovery of mental differences between groups of bright and dull pupils. Tests valuable in proving that mental differences can be discovered are named.

305. Pyle, W. H. "Retention as related to repetition." *J. Educ. Psych.*, 2: 1911, 311-321.

An experiment showing the relation of repetition to retention, memory to quickness of learning. Concludes that the fast learner is more accurate than the slow learner. Other conclusions.

306. Pyle, W. H. "The value to be derived from giving mental tests to all school children." Fourth Int. Cong. Sch. Hyg., Buffalo, 1913.

307. Pyrtle, E. Ruth. "Super-normal children—a study." *Jour. Educ. Meth.*, 1: March, 1922, 273-75.

Describes the plan used in the junior high school of Lincoln, Nebraska. On the basis of their school records the brightest pupils are selected and allowed to do three years of work in two. Many advantages are listed.

308. Rabeau, J. "Mathematische Unterrichtserfahrungen an der Begabtenschule der Köllnischen Gymnasiums." *Praktische Psychol.*, 3: 1921, 15-20. Abstracted in *Psy. Bull.*, 19: 59.

309. Race, Henrietta V. "A study of a class of children of superior intelligence." *J. Educ. Psych.*, 9: Feb., 1918, 91-98.

The report of a Louisville opportunity class. Gifted pupils able to accomplish two years' work in one. However, they can form habits that cripple their ability. (See No. 297.)

310. Rapp, Anna A. "Grouping of children by abilities and consequent changes in school procedure. 2. Procedure in Reading." Ninth Annual Schoolmen's Week Proceedings, *University of Pennsylvania Bulletin*, Vol. 23, No. 1, 263-67.

The Terman and Illinois Tests were used in the seventh and eighth grades and pupils classified according to scores.

311. Rasey, Lee. "A program arrangement for mental groups." *Sch. Rev.*, 31: 1923, 608-611.

Describes certain classes on basis of intelligence tests, accomplishment, teachers' estimates.

312. Rathmann, C. C. "The Mannheim system of school organization." *Educ. Rev.*, 53: 1917, 55-60.

A report of school organization in Mannheim, Germany, based upon individual differences in physical and mental makeup.

313. Reed, Ivy K. "The three R's at four years old." *Atlan. Mon.*, 123: May, 1919, 664-668.

Progress of Eric attributed to proper introduction to the three R's. Advantage taken of natural desire and ability to learn. School time saved by this plan.

314. Reeve, W. D. "Homogeneous classification of high-school children according to ability shown on psychological tests." *Jour. Mich. Schoolmasters' Club*, Ann Arbor, Mich., 1921, 18-26.

315. Reeve, W. D. "Homogeneous grouping of high-school students by means of psychological tests." *Fourth Yearbook Nat. Assoc. Secondary School Prins.* Menasha, Wisconsin: George Banta Publishing Company, 1921, 81-94.

States that it is a waste of time to attempt to teach the best and worst 10 percent along with average pupils. Discusses the correlation of tests and school marks and says that classification by test results makes it easier to provide suitable instruction, reduces failures, gives the brighter pupils better training, and in general conserves human resources.

316. Richman, Julia. "A successful experiment in promoting pupils." *Educ. Rev.*, 18: June, 1899, 23-29.

In a New York school the pupils of grades I-VI were divided into bright, medium, and poor sections, each going at its own rate. The effect was to increase the number of promotions.

317. Rigler, Frank. "Principles of classification." *Thirty-seventh Annual Report of the Public Schools of Portland, Oregon*, 1909-10, 113-19.

Description of the Portland plan in which the course of study is divided into fifty-four parts arranged in six cycles of one and one-half years each. At the end of each cycle pupils are reclassified according to their ability, there being two rates at which they may progress.

318. Roberts, J. E. *A Working Scheme of Promotional Efficiency.* Madison, Wis., 1916.

319. Rogers, M. C. "Adenoid and diseased tonsils: their effect on general intelligence." *Arch. Psychol.*, No. 50, 1922.

Rogers studied the effect of adenoids and diseased tonsils on general intelligence and found it very slight if any. In the first 6 months there was a slight gain in weight; in the second 6 months a more rapid gain in weight, very slight gain in height and increase in speed of tapping; but in neither period was there a rise in I.Q. nor a gain over control group in strength of grip nor in the Healy test used.

320. Root, W. T. "A socio-psychological study of fifty-three supernormal children." *Psych. Monog.*, 29, No. 4. Whole No. 133: 1921.

321. Rowland, S. V. "Individual difference among elementary grade pupils as evidenced by group intelligence tests." Eighth Annual Schoolmen's Week Proceedings, *University of Pennsylvania Bulletin*, Vol. 21, No. 37, Philadelphia, June 18, 1921, 101-04.

An account of classification based on results of the Stanford Revision and the Dearborn Tests. Special classes for inferior children were formed, also two or three groups of those remaining, and some individual instruction given.

322. Ruch, G. M. "An experiment with forced promotion." *Ed. Ad. and Superv.*, 6: Feb., 1920, 71-73.

The author discusses the successful promotion of ten pupils, selection having been made by means of intelligence tests. Other data valuable in a promotional scheme.

323. Ruch, G. M. "A study of the mental, pedagogical and physical development of the pupils of the junior division of the University High School, Eugene, Oregon." *Univ. of Oregon Publications*, Vol. I, No. 7: Sept., 1920, esp. 32-35, 46-48.

A study of 125 boys and girls. Correlations of abilities in school subjects with general intelligence were calculated and the question of acceleration and retardation discussed.

324. Rusk, R. R. "The supernormal child." *Childstudy Yearbook:* 1921.

325. Ryan, H. H. "Grouping pupils for acceleration." *El. School Jour.*, 24: Sept., 1923, 50-53.

The plan used in the Blewett Junior High School involves selections based upon chronological, mental, anatomical, and social ages, reading and arithmetic scores.

326. SAAM, THEODORE. "Intelligence testing as an aid to supervision." *El. Sch. Jour.*, 20: Sept., 1919, 26-32.

The results of an experiment given in tabular form to prove the value of the Binet tests in classifying and promoting school children. High plus correlation between mentality and school work.

327. SAKAKI, Y. "Some studies of so-called abnormally intelligent pupils." *Psych. Clin.*, 6: 1912, 18-25.

An experiment to show the need for providing proper training for superior children. The bright children of Fukuoka classified into seven groups. Results given.

328. SANDWICK, R. L. "Correlation of physical health and mental efficiency." *J. Educ. Res.*, I: 1920, 199-203.

329. SANGREN, PAUL V. "Social rating of best and poorest high-school students." *J. Educ. Psych.*, 14: April, 1923, 209-214.

An investigation in Zeeland, Mich., High School. Concludes that the scholarship of high school students is determined by the students' methods of work, application, industry, attitude, and ability to assimilate new ideas as much as by intelligence.

330. SCHLOTTE, F. "Eine experimentelle Auslese an Sprachbefähigten in der Schule." *Zeits. f. pädog. Psychol.*, 23: 1922, 29-40.

A report of the selection of superior children by means of intelligence tests.

331. SCHLOTTE, F. "Experimentelle Prüfung von Sprachbefähigten." *Pädog.—psychol. Arbeiten,* 11: 1921, 68-138. Abstract in *Psy. Bull.*, 19: 642.

332. SCHÖNBECK, E. "Die Begabten in deutschen Unterricht." *Praktische Psychol.*, 3: 1922, 223-230. Abstract in *Psych. Bull.*, 19: 612-613.

333. SCHÜSSLER, H.; u. SCHWARZHAUPT, W. "Die pädagogische und experimentell-psychologische Auslese der Begabten für die Übergangsklasse II in Frankfort am Main." *Zeits. f. päd. Psychol.*, 22: 1921, 188-195. Abstract in *Psych. Bull.*, 19: 279.

334. SCHUTTE, T. H. "A mental survey in the training department of the Moorehead State Teachers College, Moorehead, Minn." *Am. Sch. Bd. J.*, 65: Oct., Nov., Dec., 1922, 45-47, 53-54, 42-43.

The Otis, Chicago, and Army Alpha Tests were given to elementary pupils and rapid progress groups formed in each grade. Most of the pupils in these groups gained one semester in the year.

335. Schwartz, O. L. *General Types of Superior Men.* Boston. 1917.

336. Scott, Colin R. "General intelligence or school brightness." *J. Ed. Psych.,* 4: 1913, 509 ff.

337. Scripture, E. W. "Arithmetical prodigies." *Am. J. Psych.,* 4: 1891, 1-59.

A summary of mathematical prodigies and their abilities. Part two gives an analysis of their powers.

338. Search, P. W. *An Ideal School or Looking Forward.* New York. 1901.

339. Search, P. W. "Individual teaching: the Pueblo plan." *Educ. Rev.,* 7: February, 1894, 154-70.

A description of the Pueblo plan in which all work, promotion, and graduation is strictly individual. Lists a number of advantages.

340. Seashore, C. E. "Comments on the plan for sectioning classes on the basis of ability." *Sch. and Soc.,* Nov. 4, 1922: 514-517.

Extracts from replies to an inquiry as to the extent of sectioning classes on the basis of ability in colleges and universities.

341. Seashore, C. E. "Gifted children in the industries." *J. of Ed.,* 97: April 26, 1923, 461-462.

Bright children with special gifts must receive special education. Special necessary opportunities and aids for the bright children discussed.

342. Seashore, C. E. "The gifted student and research." *Sci.,* 56: Dec. 8, 1922, 641-648.

343. Seashore, C. E. "Sectioning classes on the basis of ability." *Sch. and Soc.,* 15: April 1, 1922, 353-358.

344. Seashore, C. E. "The talented child." *J. Educ. Psych.,* 7: 1916, 241-2.

Plea for tests which would serve to discover talent. Early discovery would make timely special education possible.

345. Shaer, I. "Special classes for bright children in an English elementary school." *J. Educ. Psych.,* 4: 1913, 209-222.

346. Shearer, W. J. "The Elizabeth plan of grading." *Add. and Proc. N. E. A.*, 37: 1898, 441-48.

In Elizabeth, New Jersey, promotions were made at any time upon the basis of the teacher's estimate and pupils grouped according to ability, each group going as fast as it was able. Many favorable results were obtained from this plan.

347. Shearer, W. J. "Grading for efficient organization in the interests of pupils." *Add. and Proc. N. E. A.*, 40: 1901, 285-86.

A general discussion in which the essentials of good grading are listed as follows: acceleration, classification, proper provision for reclassification, and proper apportionment of work.

348. Shearer, W. J. *The Grading of Schools, Including a Full Explanation of a Rational Plan of Grading.* New York. 1899.

349. Siders, W. R. "In class instruction, how can the individual be reached?" *Add. and Proc. N. E. A.*, 47: 1909, 175-82.

Discusses several other plans and describes that in use in Pocatello, Idaho. A combined class, group, and individual instruction system is used there.

350. Sidis, R. *Philistine and Genius.* New York. 1911.

351. Smith, Leon. "Omaha's experiment in the acceleration of gifted children." *Omaha Pub. Sch. Bull.*, Vol. 2.

352. Snedden, David. "Exceptional children." Monroe's *Cyclopedia of Education.* Macmillan Company: Vol. 2, 540-41. 1911.

Says that flexible promotion more or less takes care of exceptional children.

353. Spain, C. L. "Grouping of children by abilities and consequent changes in school procedure. 1. Procedure in Detroit." Ninth Annual Schoolmen's Week *Proceedings*, Vol. 23, No. 1, 257-63.

An account of the Detroit plan.

354. Spaulding, F. E. "The Newton educational policy." Report of Superintendent. *Annual Report of the School Committee in Newton*, Vol. 74, 15-22, 26, 1913.

States that Newton aims to provide educational opportunities adapted to all individual pupils. Parts of the general plan are to have assistant teachers to help individuals and to make promotions at any time.

355. Specht, Louise F. "Terman class in public school, No. 64, Manhattan." *Sch. and Soc.*, 9: March 29, 1910, 393-398.

An experiment with superior children and the enriched curriculum. Several methods given whereby individual differences may be met and the pupils may work to their full capacity.

356. "Special classes in Oakland, Cal." *El. Sch. Jour.*, 21: May, 1921.

Gives figures for special advancement and enriched classes in Oakland.

357. Stedman, Lulu. "An experiment in educational democracy." *Sierra Educ. News*, 15: Oct., 1919, 515-8.

358. Steppat, Margaret. "Intelligence tests in Berlin." *Jr. Exp. Pedagogy* (London), 6: Dec. 5, 1921, 170-174.

Describes tests devised by Piorkowski and Moede for use in "Begabtenschulen."

359. Stern, W. *Die Differentielle Psychologie in ihrem Methodischen Grundlagen.* Leipsig. 1911.

360. Stern, W. "The supernormal child." *J. Educ. Psych.*, 2: 1911, 143-148, and 181-190.

School systems adapted to the average pupil are uneconomical and dangerous. The problem of the gifted classes is discussed.

361. Stetson, P. C. "Homogeneous grouping in the first year of a five-year high school." *Sch. Rev.*, 29: May, 1921, 351-65.

In the Muskegon, Michigan, High School the Chicago Test was found unsatisfactory as a basis of classifying pupils but when supplemented by teachers' opinions gave better results. Both teachers and pupils favored having three groups on the basis of ability.

362. Stewart, George W. "A problem in the education of college students of superior ability." *Sch. and Soc.*, 14: Nov. 19, 1921, 439-447.

The author gives advice concerning the appointment of a committee to locate and encourage students of superior ability. Devices for encouraging super-ability discussed. Honor societies discussed.

363. Stockton, J. L., Davis, C., and Crown, M. A. Criteria for the regrading of schools. *El. Sch. J.*, 22: 55-66.

Describes the plan as used in San Jose. The central criterion was the M.A. with contributing criteria of chronological age with reference to social group, physical age with reference to health, pedagogical age with reference to school history, character age with reference to concentration and work. Three plans were followed: some put ahead to grade more nearly fitting them; some furnished with special coaching and then promoted; some organized for supervised experimental project work. Tables given showing promotions made.

364. Stoner, Mrs. Winifred S. "How I trained my daughter." *Ladies' World,* July, 1915. (See also numbers for Aug., Sept., and Oct.)

365. Stoner, Mrs. Winifred S. "How Winifred learns." *Ind.,* 86: April 24, 1916, 139-140.

366. Stoner, Mrs. Winifred S. *Natural Education.* Indianapolis: The Bobbs-Merrill Co. 194.

367. Taylor, J. S. "Grading and promotion." *Sch. and Soc.,* 17: April 14, 1923, 405-09.

Tells of classification in one New York City district which was based upon I.Q.'s, A.Q.'s, teachers' estimates, etc.

368. Taylor, Joseph S. Measuring the pupils in a large city school —a study of Public School 107, New York City. *Sch. and Soc.,* 16: July, 1922, 25-28.

369. Taylor, J. S. "The classification of pupils in elementary algebra." *J. Educ. Psych.,* 9: 1918, 361-380.

An experiment showing that both superior and inferior pupils are injured by heterogeneous grouping. Contrasts given covering ability.

370. Terman, L. M. "Discussion of gifted children section." *Proceedings First Annual Conf. on Educ. Res. and Guidance,* San Jose State Teachers College. Sacramento, California: State Printing Office, 1923, 41-43.

A summary of several addresses dealing with gifted children, with some argument in favor of rapid progress rather than enriching the curriculum in the ordinary way.

371. Terman, L. M. "Genius and stupidity." *Ped. Sem.,* 13: 1906, 307-373.

372. Terman, L. M. *The Intelligence of School Children.* Boston: Houghton-Mifflin Company, 1919. 317.

A discussion of many phases of intelligence testing including general principles, the amount of individual differences found, capacity according to mental age, prediction according to the I.Q., etc.

373. Terman, L. M. *The Measurement of Intelligence.* Boston. 1916. Especially 95-104.

Superior intelligence is five times as common among children of superior social status as it is among children of inferior status. Fifteen percent of children are superior.

374. Terman, L. M. "Mental hygiene of exceptional children." *Ped. Sem.*, 22: 1915, 529-537.

Gifted children are as normal as others. One-third of children with an I.Q. of 120 or above not given proper advantages. I.Q.'s of 65-75 indicate unsatisfactory work.

375. Terman, L. M. "A new approach to the study of genius." *Psych. Rev.*, 29: July, 1922, 310-318.

376. Terman, L. M. "Precocious children." *Forum*, 52: 1914, 893-898.

Precocious children should be studied psychologically and medically. There are three classes of bright pupils. Dangers of nervous breakdowns should be studied.

377. Terman, L. M. "Precocity and prematuration." *Amer. J. Psych.*, 16: 1905, 145-183.

378. Terman, L. M. "The psychological determinist: or democracy and the I.Q." *J. of Educ. Res.*, 6: June, 1922, 57-62.

An answer to Bagley's speech against the use of the I.Q. for classifying pupils.

379. Terman, L. M. "Suggestions for the education and training of gifted children." *Stanford Univ. Press.* 1921.

380. Terman, L. M. "The use of intelligence tests in the grading of school children." *Jour. of Educ. Res.*, 1: Jan., 1920, 20-32.

Mostly a theoretical discussion of individual differences, how many pupils should be accelerated, how many retarded, etc. Summarizes what has been found as to difference of test results and teachers' opinions as showing that tests are usually more nearly right.

381. Terman, L. M. "Were we born that way?" *World's Work*, 44: Oct., 1922, 655-60.

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382. Terman, L. M., and Anon. "An experiment in infant education." *J. Applied Psych.*, 2: 1918, 219-228.

383. Terman, L. M., and Chace, Jessie. "The psychology, biology, and pedagogy of genius." *Psy. Bull.*, 17: Dec., 1920, 397-409.

An annotated bibliography of the literature of this subject since 1914.

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A report concerning Betty Ford. Her school product discussed. Discussion showing that ability atrophies when encouragement is lacking. Spontaneity should be cultivated.

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The study included a complete physical examination with tests for visual and auditory acuity and pitch discrimination; anthropometric measurements; speech and mental examinations. The last included 2 general intelligence tests and 49 analytic tests. The performance of each child was compared with the percentile score of the group.

392. Town, Clara H. "The superior child in our schools." *Ed. Rev.*, 65: Jan., 1923, 17-21.

393. Trabue, M. R., and Stockbridge, F. P. *Measure Your Mind. The Mentimeter and How to Use It.* Doubleday, Page and Co., New York, 1920, 65-69.

Describes an experiment in teaching gifted children in P. S. 64, New York City.

394. Trabue, M. R. "Some pitfalls in the administrative use of intelligence tests." *Jour. Educ. Res.*, 6: June, 1922, 1-11.

Superior pupils loaf. They need more work. Curricula should be enriched.

395. Trabue, M. R. "The use of intelligence tests in junior high schools." *Twenty-first Yearbook* of this Society: 1922, Part II, 169-188, esp. 183-185.

Answers some of the objections to segregation of bright pupils.

396. Triplett, N. "Pedagogical arrests and peculiarities." *Ped. Sem.*, 12: June, 1905, 141-157.

Examples are given to show that teachers may cause arrested development. Necessary relation between successful drill and interest. Two periods of arrest; seven to nine, and adolescence.

397. Trummer, Mary C. "Instruction adapted to groups of differing ability." *Sch. Rev.*, 30: June, 1922, 409-11.

Describes the 'accommodation' and 'express' classes, the 'opportunity,' 'adjustment' and 'make-up' groups used in a Los Angeles high school. Pupils are selected on the basis of their elementary school marks.

398. Tupper, C. R. "The grading of pupils in Miami, Arizona." *Educ. Res. Bull.*, 2: May 30, 1923, 163-65.

A description of the plan in use in Miami in which class groupings are made more or less on the basis of mental age. The teachers appear to favor the plan. It has reduced failure by more than two-thirds and increased acceleration considerably.

399. ULLRICH, R. "Sonderschulen f. hervorragend Befähigte?" *Neue Jahrbücher f. Päd.*, 16: 1905, 425-440.

400. *University of Pennsylvania Bull.* 1922, 23, No. 1.

Contains a number of reports of the grouping of children by abilities and the consequent changes in school procedure with account of methods used.

401. UNRICH, FLORA. "A year's work in a superior class." *Psych. Clin.*, 5: 1912, 245-250.

A survey of a superior class. Method of pupil selection, their mental characteristics, aims, and results achieved.

402. VAN ALSTYNE, DOROTHY. "A study of ten gifted children whose school progress was unsatisfactory." *Jour. Educ. Res.*, 8: Sept., 1923, 122-125.

Six of these children had a tendency toward emotional instability. Three cases are given in detail. The effect of home environment and the pupil's attitude towards the teacher.

403. VANDER ZALM, H. E. An initial inventory of the mental capacities of primary children. *Educ.:* March, 1923, 440-445.

A discussion of the need of classification in primary grades according to ability as shown in mental tests.

404. VAN SICKLE, J. H. "Provision for gifted children in public schools." *Add. and Proc. N. E. A.*, 48: 1910, 155-60.

Mentions various reports and studies that had been made and tells of the Baltimore plan of giving high-school pupils extra work if they are bright enough.

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States that both inferior and superior children should receive special attention and that there should be groups organized on the basis of ability.

406. VAN SICKLE, J. H. "Rept. com. on provision for exceptional children in the public schools." *Proc. N. E. A.*, 1908, 350-1.

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407. VAN SICKLE, J. H., AND OTHERS. "Preliminary report of the committee on provision for exceptional children in the public schools." *Add. and Proc. N. E. A.*, 46: 348-85, 47: 343-67, 1908, 1909.

A discussion of physically, intellectually, and morally exceptional children and of various provisions being made for them in Worcester, Indianapolis, Baltimore, St. Louis, Berlin, and elsewhere.

408. Van Sickle, Witmer, and Ayres. "Provision for exceptional children in public schools." *U. S. Bur. Educ. Bull.*, No. 461, 92 (1911, No. 14).

409. Verner, G. F. "Can teachers select bright and dull pupils?" *Jour. Educ. Res.*, 6: Sept., 1922, 126-132.

410. Viereck, P. "Lateinsche Unterrichtserfahrungen an der Begabtenschulen des Köllnischen Gymnasiums." *Praktische Psychol.*, 3: 1922, 147-150. Abstract in *Psychol. Bull.*, 19: 641.

411. Ward, L. F. *Applied Sociology.* New York, 1906. Especially Chs. 8, 9, 10.

Genius defined and distinguished. Heredity discussed. Relation of heredity and environment to genius discussed. Illustrations given to show presence of genius among all classes.

412. Washburn, W. C. "Special provision for the bright pupil." *Pop. Educ.*, 30: Sept., 1912, 5-6.

413. Washburne, C. W. "Educational measurements as a key to individual instruction and promotions." *Jour. Educ. Res.*, 5: March, 1922, 195-206.

An account of the individual system used in Winnetka.

414. Washburne, Carleton W. "Breaking the lock step in our schools." *Sch. and Soc.*, 8: Oct. 5, 1918, 391-402.

Deals with the question of individual instruction and promotion.

415. Washburne, C. W. "The individual system in Winnetka." *El. Sch. Jour.*, 21: September, 1920, 52-68.

Describes the system in Winnetka in which progress and promotion are entirely individual, in which most of the work is done by using practise material and then taking complete diagnostic tests. States that every teacher favors the plan, that at least five percent were saved from repeating and $5000 saved in one year.

416. Wells, F. L. "The relation of practice to individual differences." *Amer. J. Psych.*, 23: Jan., 1912, 75-88.

417. Whipple, G. M. "Educational determinism; a discussion of Professor Bagley's address at Chicago." *Sch. and Soc.*, 15: June 3, 1922, 599-602.

A strong reply to Bagley's address in which the validity and use of intelligence tests are strongly advocated.

418. Whipple, G. M. "Experiments in the education of gifted children." *J. Mich. Schoolmaster's Club:* 1919, 8-23.

419. Whipple, G. M. *Classes for Gifted Children.* Bloomington, Ill., 1919. 151.

Classifies tests with reference to their value in discovering gifted children. Chapter ten gives suggestions concerning the organization and conduct of special rooms. Shows particularly the value of intelligence tests as compared with teachers' estimates in the selection of gifted pupils. Demonstrates that the top 10 percent can do two years' work in one at least for one year. (See also references to Henry and to Coy.)

420. Whipple, G. M. "The problem of selecting and training gifted children in the public schools." *Bull. Extension Div. Indiana Univ.*, 4, No. 4: Dec., 1918, 6-16.

421. Whipple, G. M. "Provision for the education of gifted children in the United States." *Mother and Child, Supplement:* Sept., 1923. 12.

Describes briefly various plans for handling gifted pupils in the elementary schools and lists the cities in which these plans are being tried.

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A discussion, in the form of questions and answers, of six special features of the problem of meeting the needs of supernormal mentality.

423. Whipple, G. M. "The supernormal child." *J. Educ. Psych.*, 2: 1911, 164-287.

The report calls attention to the articles by Stern, showing how his plans may be adapted to the supernormal as well as to the sub-normal.

424. Whipple, G. M. "Supernormal children." *Cyclop. of Educ.*, 1913.

425. Whitcomb, M. Edith. "Intelligence tests in the primary grades." *Jour. Educ. Res.*, 5: January, 1922, 58-61.

An account of the work done with the Stanford Revision in Council Bluffs, Iowa. Gives various data and shows that the plan of placing pupils by test scores works well.

426. WHITNEY, F. P. "Equality and the schools." *Educ.*, 33: October, 1912, 84-90.

427. WHITNEY, F. P. "Provision for accelerant and retarded children in junior high school." *Sch. Rv.*, 27: Dec., 1919, 695-705.

In the Collinswood Junior High School of Cleveland pupils were placed by school marks and test results.

428. WHITTIER STATE SCHOOL, Whittier, Cal. "Exceptional children in the schools of Santa Ana, Cal." *Dept. of Res. Bull.*, No. 6, 24-25.

429. WILHELM, H. "Beiträge zur Begabungspsychologie auf Grund des Lehrerurteils. *Zeits f. angew, Psychol.*, 19: 1922, 291-341. Abstract in *Psy. Bull.*, 19: 290.

430. WILLIAMS, J. H. "Delinquent boys of superior intelligence," *J. of Delinquency*, 1: March, 1916, 33-52.

431. WILLIAMS, T. A. "Intellectual precocity. Comparison between John Stuart Mill and the son of Dr. Boris Sidis." *Ped. Sem.*, 18: 1911, 85-103.

Intelligent direction towards selected objectives essential for precocious children. Trained teachers needed. Naughtiness connotes energies denied proper outlets.

432. WILLIAM, T. A. "Principles and methods which result in intellectual precocity." *Lancet Clinic*, 1915, 1-28.

433. WINCH, W. H. *When Should a Child Begin School? An Inquiry into the Relation Between the Age of Entry and School Progress.* Educ. Psychol. Monographs: Warwick York, Baltimore, 1911.

434. WITMER, L. "Retardation through neglect in children of the rich." *Psych. Clin.*, 1: 1900, 157-174.

Illustrations given to prove that retardations may occur in very wealthy homes and very poor homes. Tutors are sometimes handicapped by improper home conditions.

435. WITMER, L. "Qualities of very bright children." *Psych. Clinic*, 13: 1919, 38 ff.

436. Witmer, L. "The training of very bright children." *Psych. Clin.*, 13: Dec., 1919, 88-96.

437. Witte, K. *The Education of Karl Witte* (Eng. trans. by L. Wiener, edited by H. A. Bruce), New York. 1914.

438. Woburn, Mass., School Committee. *Annual Reports.* 1903, 1914.

439. Woodrow, H. *Brightness and Dullness in Children,* Philadelphia. 1919. (Especially Chs. XIII and XIV.)

440. Woods, Elizabeth L. "Provision for the gifted child." *Educ. Adm. and Superv.*, 3: 1917, 139-149.

A statistical summary of cities providing for exceptional children. Results of special promotion justify the administrative officials.

441. Woody, Clifford. "Tests and measures in the schoolroom and their value to the teachers." *Sch. and Soc.*, 6: July 21, 1917, 61-66.

Mentions others but especially tells of an experiment in Chatham, N. J. On the basis of scores on five achievement tests the best pupils were given extra promotions. All did well and led in their new classes.

442. Woolfolk, A. "The case of him that hath ten talents," *Virginia J. of Educ.*, 11: Sept., 1917, 18-22.

443. Worcester, Mass., School Committee. *Annual Reports,* 1902, 1904, 1912.

444. Wurth, Carl. "Intelligence tests and promotions." *Am. Sch. Bd. J.*, 65: Dec., 1922, 50-51.

An argument against segregating bright pupils for three reasons: They should spend more time getting work better; their absence reduces the enthusiasm of the class; they acquire vanity and false pride.

445. Yates, Dorothy H. "Impressions from two years spent in testing gifted children." *Proc. First An. Conf. Educ. Res. and Guid.*, San Jose State Teacher's Coll., Sacramento, Cal., State Printing Office; 1923, 29-33.

A discussion of gifted children with some argument to the point that training for leadership does not need to be begun early and that bright pupils can be forced too much.

446. YATES, DOROTHY H. *A Study of Some High School Seniors of Superior Intelligence.* Bloomington: Public School Publishing Co., 1922. 75.

This is a study of the twenty-five brightest seniors of Oakland high schools in comparison with 25 of average intelligence. It was found that the pupils with superior intelligence were quicker in learning to talk and walk, in cutting first teeth, and in reaching physiological maturity; and were more interested in school, athletics, and music, but less in art.

447. YATES, DOROTHY H. "A study of twenty high-school seniors of superior intelligence." *Jour. Ed. Psych.*, 11: May-June, 1920, 264-274.

Relation of home conditions and physique to proper development. Vocational aims and intellectual interests of gifted and average pupils discussed.

448. YODER, A. H. "The study of the boyhood of great men." *Ped. Sem.*, 3: 1894, 134-156.

449. YOUNG, K. "Genius, what is it? Can it be anticipated?" *Ped. Sem.*, 30: June, 1923, 172-176.

Genius is complex and cannot be reduced to objective standards. It cannot be written in the form of two variables: intellectual and emotional traits.

450. ZAUCK, C. "Sonderklassen f. hevorragend begabte Schüler. *Pädagogische Zeitung*, 41: Feb. 15, 1912, 109-112 (See also 112-114).

451. ZIRKLE, H. W. "Character and results of special rooms as conducted in the Whittier School of Denver." *El. Sch. Jour.*, 21: November, 1920, 189-97.

Pupils are placed in regular, accelerated, and retarded rooms according to test results, age, school marks, health, etc.

452. ZIRKLE, H. W. "Taking care of the gifted child." *The Technique of Supervision by the Elementary School Principal. The First Yearbook of the Department of Elementary School Principals.* Washington: National Education Association, May, 1922, 81-86.

In a Denver school, superior pupils are selected by individual and group tests, school marks, effort, and physical condition and are given the opportunity to gain time. Practically all of the pupils selected are able to gain time and still continue to make high school marks.

453. Zornow, T. A., and Peckstein, L. A. "An experiment in the classification of first-grade children through the use of mental tests." *El. Sch. Jour.*, 23: October, 1922, 136-46.

In Rochester, New York, over 400 entering pupils were tested with the Stanford Revision and classified according to the test results. Later the Detroit First-Grade Group Test was used. It was found that but few pupils had to be shifted after being thus placed.

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University of Michigan,
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THE
TWENTY-THIRD YEARBOOK

OF THE

NATIONAL SOCIETY FOR THE STUDY OF EDUCATION

PART II

VOCATIONAL GUIDANCE *and* VOCATIONAL EDUCATION FOR THE INDUSTRIES

Prepared by
A. H. EDGERTON
Teachers College, Columbia University
With the Assistance of Numerous Collaborators

Edited by
GUY M. WHIPPLE, Ph. D.
Secretary

This Yearbook will be Discussed at the Chicago Meeting of the National Society; Section I, Saturday, February 23, 8:00 p. m.
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TABLE OF CONTENTS

PAGE

Editor's Preface . . . VI

Foreword . . . VII
A. H. Edgerton, Teachers College, Columbia University

SECTION I. VOCATIONAL GUIDANCE

CHAP.

I. PRESENT STATUS OF GUIDANCE ACTIVITIES IN PUBLIC SCHOOLS . . . 3
A. H. Edgerton, Teachers College, Columbia University, and
L. A. Herr, Lincoln School of Teachers College, New York City

II. A STATE PLAN OF EDUCATIONAL AND VOCATIONAL GUIDANCE . . . 29
Harold L. Holbrook, Chairman, Committee on Guidance, Pennsylvania Department of Public Instruction, Harrisburg, Pennsylvania

III. GUIDANCE PROGRAMS IN LARGE CITIES . . . 53
A. Introductory . . . 53
L. A. Herr, The Lincoln School of Teachers College, New York City
B. Guidance in the Atlanta Schools . . . 55
H. H. Bixler, Director of Vocational Guidance, Atlanta, Georgia
C. Guidance in Boston . . . 63
Susan B. Ginn, Director of Vocational Guidance, Placement Bureau, Boston, Massachusetts
D. Guidance in Chicago . . . 69
Anne S. Davis, Director Vocational Guidance, Department of Public Schools, Chicago, Illinois
E. Guidance in Detroit . . . 73
A. H. Edgerton, Formerly Supervisor of Vocational Information and School Counselling, Detroit, Michigan
F. Guidance in New York City . . . 83
Mrs. Alice K. Pollitzer, Director, Vocational Service for Juniors, New York City
G. Guidance in New York City . . . 87
Bertha Luchs, Counsellor, West Side Continuation School, New York City
H. Guidance in the Pittsburgh Public Schools . . . 92
Edward Rynearson, Director, Department Vocational Guidance, Pittsburgh Public Schools, Pittsburgh, Pennsylvania

IV. GUIDANCE ACTIVITIES IN SMALL CITY SYSTEMS . . . 97
A. Introduction . . . 97
B. Educational and Vocational Guidance in the Public Schools of Gary, Indiana . . . 101
Albert Fertsch, Director of Guidance and Placement, Gary, Indiana
C. Educational and Vocational Guidance in the Public Schools of Jackson, Michigan . . . 105
Charles A. Wardner, Director of Vocational and Educational Guidance, Jackson, Michigan
D. Educational and Vocational Guidance in the Public Schools of Lincoln, Nebraska . . . 110
Harriet E. Towne, Director of Vocational Guidance, Lincoln, Nebraska
E. Educational and Vocational Guidance in the Technical High School, St. Cloud, Minnesota . . . 114
John F. Friese, Manual Arts Department, Public Schools, St. Cloud, Minnesota

V. A PUBLIC SCHOOL PROGRAM FOR COLLECTING AND USING OCCUPATIONAL INFORMATION . . . 119
A. H. Edgerton, Formerly Supervisor of Vocational Information, Curricula, and Guidance, Detroit, Michigan, and
R. B. Cunliffe, Vocational Adviser, Central High School, Detroit, Michigan

VI. VOCATIONAL GUIDANCE IN COLLEGES AND UNIVERSITIES . . . 139
Wm. H. Stone, Associate in Education, University of California, Berkeley, California

VII. ILLUSTRATIONS OF VOCATIONAL GUIDANCE IN COLLEGES AND UNIVERSITIES . . . 147
George E. Myers, Professor of Vocational Education, School of Education, University of Michigan

CHAP. PAGE
VIII. OBJECTIVE MEASUREMENTS IN EDUCATIONAL AND VOCATIONAL GUIDANCE . . . 151
Harry J. Baker, Clinical Psychologist, Detroit Public Schools
IX. PREPARATION FOR THE WORK OF VOCATIONAL COUNSELLING . . . 173
A. Introductory . . . 173
John M. Brewer, Associate Professor of Education and Director of the Bureau of Vocational Guidance, Harvard University, Cambridge, Massachusetts
B. The Training of Vocational Counsellors at Teachers College, Columbia, University . . . 176
Frederick G. Bonser, Professor of Education, Teachers College, Columbia University
C. The Training of Vocational Counsellors at the University of Michigan . . . 180
George E. Myers, Professor of Vocational Education, School of Education, University of Michigan
D. The Training of Vocational Counsellors in the Graduate School of Education, Harvard University . . . 184
John M. Brewer, Associate Professor of Education and Director of the Bureau of Vocational Guidance, Harvard University
E. The Training of Vocational Counsellors at the University of Chicago . . . 187
Emery T. Filbey, Assistant Professor of Industrial Education, Chicago University
X. A SELECTED BIBLIOGRAPHY OF EDUCATIONAL AND VOCATIONAL GUIDANCE . . . 191
R. B. Cunliffe, Vocational Bureau, College of the City of Detroit, Detroit, Michigan

SECTION II. VOCATIONAL EDUCATION FOR THE INDUSTRIES

I. OUTSTANDING TENDENCIES IN INDUSTRIAL AND PART-TIME EDUCATIONAL PROGRAMS IN ONE HUNDRED FORTY-THREE CITIES . . . 201
A. H. Edgerton, Teachers College and The Lincoln School, Columbia University, New York City
II. DEVELOPMENT OF INDUSTRIAL EDUCATION PROBLEMS IN PUBLIC SCHOOLS . . . 229
Howard Briggs, Director of Vocational Education, Cleveland, Ohio
III. TRADE AND JOB ANALYSIS AS AN AID IN VOCATIONAL CURRICULUM BUILDING . . . 237
Harry D. Kitson, Professor of Psychology, Indiana University, Bloomington, Indiana
IV. INDIVIDUAL INSTRUCTION IN THE VOCATIONAL SCHOOL . . . 257
Robert H. Rodgers, Bureau of Teacher Training, Milwaukee, Wisconsin
V. WHAT A FEW PART-TIME OR CONTINUATION SCHOOLS ARE DOING . . 275
A. Introduction . . . 275
Anthony M. Goldberger, Principal of Continuation School, Pittsburgh, Pennsylvania
B. Rochester, New York, Continuation School . . . 276
E. A. Roberts, Principal
C. Johnstown, Pennsylvania, Continuation School . . . 278
James Killins, Director of Vocational Education
D. Chicago, Illinois, Continuation Schools . . . 280
A. G. Bauersfield, Supervisor of Continuation Schools
E. Schenectady, New York, Continuation School . . . 281
Charles W. Clark, Director
F. Clifton, New Jersey, Continuation School . . . 283
Chester F. Ogden, Principal
G. Pittsburgh, Pennsylvania, Continuation School . . . 285
Anthony M. Goldberger, Principal
H. Detroit, Michigan, Continuation School . . . 286
E. Lewis Hayes, Supervisor of Industrial Education
I. St. Louis, Missouri, Continuation School . . . 289
L. W. Rader, Assistant Superintendent of Schools
J. Brooklyn, New York, Continuation School . . . 290
Benjamin Fox, Principal

CHAP. PAGE

K. Plainfield, New Jersey, Continuation School................ 293
Arthur F. Hopper, Director of Industrial Education

VI. DAY AND EVENING INDUSTRIAL COURSES IN SMALLER CITIES...... 295
A. The General Situation.. 295
B. The Day Vocational School...................................... 297
O. B. Badger, Director of Industrial Education, Wichita, Kansas
C. Evening Vocational Courses..................................... 299
O. B. Badger, Director of Industrial Education, Wichita, Kansas
D. Vocational Education in East Chicago, Indiana.............. 302
O. H. Day, Assistant Professor of Vocational Education, Indiana University
E. The Saunders Trade School, Yonkers, New York............ 305
Joseph J. Eaton, Saunders Trade School
F. Vocational Work in the Public Schools of Cedar Rapids, Iowa.. 310
Homer C. Couch, Principal, Grant Vocational High School
G. Co-operative Industrial Training at York, Pennsylvania...... 313
F. A. R. Hoffeditz, Director of Industrial Training
H. Co-operative Industrial Training at Johnstown, Pennsylvania.. 315
James Killins, Director of Vocational Education
I. The Day Vocational Courses at Toledo, Ohio................ 318
J. M. Sterling, Vocational Director, Woodward Technical High School
J. Vocational Education at Berkeley, California................ 320
W. W. Patty, Director of Vocational Education
K. The All-Day Vocational Classes at Muskegon, Michigan...... 323
Frank McCrea, Director, Part-Time and Evening Vocational Classes
L. All-Day Vocational Classes in Electricity at Utica, New York.. 325
Clarence L. Crofoot, Utica, New York
M. A Co-operative Course in Vocational Printing at Evansville, Indiana 327
G. E. Ruddell, Instructor in Printing, Central High School

VII. TRAINING WORKERS IN INDUSTRY............................. 329
C. A. Prosser and C. R. Allen, William Hood Dunwoody Industrial Institute, Minneapolis, Minnesota

VIII. DEVELOPMENT OF MEASUREMENTS IN VOCATIONAL INDUSTRIAL EDUCATION 363
Harry J. Baker, Clinical Psychologist, Detroit Public Schools

IX. TRAINING FOREMEN AND OTHER LEADERS IN INDUSTRY.......... 379
A. Introduction 379
James McKinney, Educational Director, American School, Chicago, Illinois
B. Foreman Training as Carried on by the Vocational Department of Ohio State University................................. 386
D. J. MacDonald, Ohio State University, Columbus, Ohio
C. Foreman Training as Carried on by the Vocational Education Department of Indiana University......................... 393
G. F. Buxton, Vocational Education Department, Purdue University, Lafayette, Indiana
D. Foreman Training as Carried on by the Vocational Education Department of the University of Michigan.................. 397
Thomas Diamond, Associate Professor of Vocational Education, School of Education, University of Michigan
E. Some Conclusions Regarding Methods of Foreman Training... 402
Charles R. Allen, The William Hood Dunwoody Industrial Institute, Minneapolis, Minnesota

X. TRAINING OF TEACHERS FOR VOCATIONAL INDUSTRIAL SCHOOLS: SOME FUTURE PROSPECTS.................................. 411
David Snedden, Teachers College, Columbia University

XI. LIST OF PUBLICATIONS FOUND HELPFUL IN TEACHING TRAINING COURSES IN INDUSTRIAL EDUCATION.......................... 423
Frank Cushman, Federal Board for Vocational Education, Washington, D. C.

CONSTITUTION OF THE NATIONAL SOCIETY FOR THE STUDY OF EDUCATION.. 437
MINUTES OF THE CLEVELAND MEETING OF THE SOCIETY................. 439
REPORT OF THE TREASURER OF THE SOCIETY FOR 1923................. 441
LIST OF HONORARY AND ACTIVE MEMBERS OF THE SOCIETY............. 443
INFORMATION CONCERNING THE SOCIETY............................. 456

EDITOR'S PREFACE

In 1921 the Society published as its *Twentieth Yearbook, Part I,* the ''Second Report of the Society's Committee on New Materials of Instruction.'' Among the various sub-committees which collected material for that report was one on ''Industrial Arts Projects,'' headed by A. H. Edgerton. For various reasons it proved impracticable to incorporate the report of this committee in the *Yearbook* in question. Since that time the idea of issuing a report upon industrial education has grown and ramified to include other related phases of educational activity, particularly that of vocational guidance.

The present Part II of the *Twenty-Third Yearbook* is the fruit of this expansion of the original intent to gather projects illustrative of school work in the industrial arts. The result has been the compilation of a fairly extensive mass of material from many quarters, which ought to afford a fairly good picture of what is in the minds of those who are concerned now-a-days with vocational guidance and industrial education. Those who are actively engaged in this field will surely read this *Yearbook* with keen interest to discover what their fellow-workers are doing or planning to do. Those who are not actively engaged in this field, and who, at least in some cases, entertain more or less suspicion as to the merits of the whole movement, will, we trust, read the *Yearbook,* even if critically, to find out what the leaders in the movement advocate and why they advocate it.

To Mr. A. H. Edgerton belongs particular credit for gathering and organizing the material of the volume. The editor takes the responsibility for the final arrangement of the material.

GUY M. WHIPPLE.

FOREWORD

Recent requests for reliable information to assist boards of education and school officials in determining the relative possibilities of different plans for realizing common aims, or purposes, in vocational guidance and industrial education programs have made it evident that there is a growing interest in the self-comparison and self-improvement types of procedure. Ever increasing demands confront all public school systems which are seriously attempting to meet local needs for extending legitimate forms of educational service. The various advantages of such self-imposed inventory and readjustment from time to time are becoming obvious to conscientious school administrators and teachers.

The perplexing problems involved in meeting new and changing demands for different kinds and levels of educational opportunity, as well as certain honest differences in opinion concerning the validity of these requests for specialized, extended, and cooperative service, have forced a greater interest in educational and occupational diagnosis. Worth-while investigations and analyses have resulted from the gradual acceptance by school representatives of the working hypothesis that provisions for educational service should be based upon established facts, whenever possible, rather than chiefly upon more or less variable opinions. This same attitude was evidently possessed by Charles Dickens when he wrote "Far be it from me to affirm that what everybody says is true." Likewise to-day, that which nearly every person believes to be true, or just takes for granted because the majority has accepted it, often possesses some admixture of a falsehood which escapes detection for a long time because it gets wrapped up, labeled, and pigeon-holed as a "foregone conclusion."

This investigation clearly shows that the educational traditions, as well as these present-day needs, still quite largely determine the purpose, content, and method of the vocational guidance activities and the industrial education programs in a diminishing number of school systems. On the other hand, the suggestive reports of notable developments in 143 American school systems, which are presented in this *Yearbook*, are so many evidences of a serious attempt to prepare our pupils for efficient service and more intelligent citizenship.

The social and economic needs of to-day seem to call for provisions in instruction and guidance which aim (1) to challenge and develop the pupil's aptitudes and capacities and (2) to train and educate him for the many-sided demands which the future is expected to make upon him. These demands assume that all public school systems will attempt to provide curricula for aiding pupils who continue their school work to plan their programs more wisely in secondary and higher education, and also for helping those who might find it advisable or necessary to leave school with a minimal amount of preparation to choose their respective procedure more thoughtfully. It is interesting to note that increasing numbers of teachers and administrators insist that no public school system is complete today unless it makes adequate provision for aiding each boy or girl in selecting a suitable occupation and preparing properly for it.

The rapid growth of intermediate and junior high schools in this country and the subsequent development of specialized curricula in a number of senior high schools, as well as in several separate vocational or trade schools, represent a serious attempt to assist all children, regardless of their social status or possible life work, in meeting these current and changing demands for many-sided service. This growing tendency to respect individual differences by providing varying degrees of differentiation during the secondary school period implies that pupils should be provided with the kinds and qualities of experience in knowledge and skill which will assist them in establishing those habits, attitudes, and appreciations that are found to contribute most to the daily conduct of worthy citizens, intelligent consumers, and efficient producers.

This opportunity is taken to thank the many teachers, counsellors, co-ordinators, placement officers, principals, supervisors, directors, superintendents, state officials, and other specialists who have so generously assisted in person, by questionnaire, and by letter in securing and interpreting data for the various comparative studies included in the introductory chapters for Section I on Vocational Guidance and Section II on Vocational Education for the Industries. It is also desired to express indebtedness to the teachers and administrators who have cheerfully co-operated by contributing valued reports of their experience in successfully developing local courses and programs, a number of which are acknowledged in the following chapters of this *Yearbook*. Especial acknowledgment is gratefully made to L. A. Herr of The Lincoln School, New York City; G. H. Hargitt of the Public Schools, St. Louis, Missouri; John M. Brewer of the Vocational Guidance Bureau, Harvard University; Frederick G. Bonser of Teachers College, Columbia University; J. C. Beswick of the California State Department of Industrial Education; Harry D. Kitson, of the Department of Psychology, Indiana University; Robert H. Rodgers of the Bureau of Teacher Training, Milwaukee, Wisconsin; Anthony Goldberger of the Continuation School, Pittsburgh, Pennsylvania, and James McKinney of the American School, Chicago, Illinois, for their able assistance in selecting and adapting designated sections of these reports dealing with problems of vocational guidance or industrial education.

A. H. EDGERTON.

SECTION I

VOCATIONAL GUIDANCE

CHAPTER I

PRESENT STATUS OF GUIDANCE ACTIVITIES IN PUBLIC SCHOOLS

A. H. Edgerton
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and
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After reading a considerable amount of current educational literature one might conclude that our modern public schools have little obligation for assisting adolescent and older boys and girls to choose wisely both educational opportunities and occupational pursuits. In this connection, it is a significant fact that *143 American cities recently reported varied attempts to provide organized educational and vocational guidance programs* in their respective school systems. However, it should be borne in mind that these reports represent existing tendencies in the more progressive public schools. Because of their conviction that practical guidance and school counseling are indispensable factors in the success of the whole school organization, such schools have ceased to limit the scope of their guidance activities to mere theoretical considerations, or even to incidental study and action. In these democratic school systems an analysis of present-day practices indicates clearly that there is a growing consciousness of the urgent need for having youths of twelve to fifteen years of age, and older, encouraged to acquire vocational knowledge and insight as a basis for judgment and choice. For these children, a public school education now includes a reasonable amount of information and perspective of relative occupational opportunities and employment requirements.

MODERN SCHOOLS RECOGNIZE INCREASING NEEDS FOR SYSTEMATIC GUIDANCE

For a number of years the demand for systematic guidance and counsel has not been lacking in large and small secondary schools. The urgent needs of pupils for choosing suitable schools, courses of study, and subjects of instruction, and also for gaining information about possibilities and conditions in selected occupations, have challenged our best teachers in modern schools to give limited individual and group advisement by means of interviews and conferences and through various school experiences. But until recently vocational guidance in the schools investigated was considered incidental rather than a definite and functioning part of the whole school organization. In fact, until a few years ago everyone in general and no one in particular had been charged with this twofold responsibility (1) for *aiding individual pupils in choosing educational and vocational advantages,* and (2) for *imparting worth-while knowledge of occupational opportunities and employment requirements.* The results of such hit-or-miss practices usually have failed to provide a satisfactory basis for the proper classification of pupils, for the purposeful election of courses, for the intelligent choices of life callings, and for the most satisfactory adjustments in employment. In each one of the cases investigated it has been obvious that the success of the guidance program has depended not only upon the qualifications and the experience of those directly responsible for educational and vocational counselling, but also upon the adequacy of the provisions for collecting, interpreting, and using needed occupational data relating to industrial, commercial, agricultural, household, or professional callings.

It has been realized for some time that guidance activities are not to be considered a panacea for all educational and vocational ills. With the few exceptions which will be cited in the following pages of this study, it is insisted that the many complexities and changes due to social and economic developments practically demand that boys and girls no longer be required to base their important educational decisions and vocational choices and adjustments upon mere guesses and assumptions or even upon meager data. It is quite generally believed that any person must first know something of the meaning of those economic facts, personal relationships, and relative values which are inherently related to this problem of selecting a suitable life career and preparing adequately for it, before a wise decision can be made; that otherwise one is prone to deal with opinion, with the too frequent result that he is influenced largely by incidental factors. As might be inferred, a large majority of these reports also indicate that each individual who decides to enter upon a specific training program, designed to prepare for a wage-earning occupation, also might well have acquired a reasonable basis for this choice as a result of some factual understanding of his own preferences and abilities.

As an outcome of these serious endeavors to meet current and changing demands for purposeful instruction and systematic guidance, it is found that marked increases in interest, ambition, and school attendance often follow the inauguration and development of suitable courses of study and their accompanying guidance programs. This is observed most frequently in schools which are attempting to meet the individual needs and capacities of the pupils in question. As many mistakes may result from misinformation and misdirection, counsellors, advisers, co-ordinators and teachers in increasing numbers are trying to overcome any practices which force unreliable information and unwarranted decisions upon youth. Several school systems are now attempting to furnish all pupils in junior and senior high schools, as well as those in continuation and preparatory classes and specialized vocational courses, with accurate knowledge concerning relative opportunities and requirements in the social, economic, and the larger personal aspects of important life callings. While it has long since been agreed that, if possible, children should be sufficiently well prepared in school so that they may exercise intelligent judgment in weighing values and in choosing their future courses of study and work, instances are being reported from a few cities in which the traditional curriculum is failing hopelessly to provide such concrete experiences and reliable knowledge as would help materially in making this possibility a reality.

On the other hand, wherever desirable occupational studies have been based upon actual facts and have received proper attention, these have not only assisted the pupils in their choices and enriched the respective subjects and courses of study, but they likewise have contributed repeatedly to a more intelligent understanding of the different aspects of vocational life. This great need, and obligation, for assisting pupils with problems of an efficient choice, both as to self-expression and social service, suggests that, if possible, each pupil's decision should result from careful comparisons and reasoning based upon reliable information. Furthermore, this important decision preferably should be made as a result of some tangible evidence of the pupil's abilities and inabilities as well as his likes and dislikes. In other words, the educational needs of today seem to call for instruction and guidance which aim (1) to develop the pupil's general abilities and specialized capacities, and (2) to prepare him as far as possible for the demands which the future is going to make upon him.

CURRENT TENDENCIES IN VOCATIONAL AND EDUCATIONAL GUIDANCE PROGRAMS

During the past few years it has been generally accepted that an adequate program for educational and vocational guidance requires continuous and systematic counsel with children during their entire school attendance above the sixth grade as well as supervision of their early employment training and adjustment periods. Notwithstanding the desirability of having such complete provisions in the public schools, the reports pertaining to the 143 city programs indicate clearly that there is a wide difference in emphasis even in the few cities where such well-balanced guidance bureaus or departments now exist.

The relation existing between the size of these cities and the corresponding provisions for occupational studies, school counsellors, placement officers and co-ordinators is shown in Table I. A careful study of these data reveals several varied tendencies in current practice. For example, although a number of schools have successfully inaugurated separate credit courses in ''occupations,'' ''vocational information,'' ''vocational civics,'' and the like, there is some difference of opinion relative to the necessity of resorting to this practice where broad and flexible programs of enriched studies and

TABLE I.—THE RELATION BETWEEN THE SIZE OF THE CITIES AND THEIR CORRESPONDING PROVISIONS FOR OCCUPATIONAL STUDIES, SCHOOL COUNSELLORS, PLACEMENT OFFICERS, AND CO-ORDINATORS

Population of Cities	Cities Having Guidance Activities		Number of Classes To Study Occupations		Number of School Counsellors		Number of Placement Officers and Co-ordinators	
	Number	Percent	English, Civics, Practical Arts, etc.	Separate Credit Courses	Part Time	Full Time	Part Time	Full Time
10,000 to 15,000....	11	8	10	2	6	2	9	3
15,000 to 100,000....	83	58	93	82	94	35	105	48
100,000 and over......	49	34	116	99	111	87	53	61
TOTALS....	143	100	219	183	211	124	167	112

vital experiences are offered, and suitable provisions are made for school counselling. Nevertheless, it will be noted that large numbers of these schools are continuing to offer such separate courses, either because of their faith in this method, because of the necessity of meeting a period of reorganization and transition, or because of the lack of feasibility in relieving one or more school representatives sufficiently to become responsible for group meetings, individual interviews, etc. At any rate, nearly all are agreed that the success of these occupational studies, which are presented either through separate credit courses or through English, civics, practical arts, and the like, will be determined largely by the training and experience of the counsellors or teachers in charge and the provision for collecting, evaluating, and imparting the information involved. Furthermore, it is believed that under no condition should these considerations about industrial, commercial, household, agricultural, and professional occupations be made incidental instead of an important and functioning part of the whole school program.

Notwithstanding this wide difference in the methods of procedure, these schools are seriously attempting to prepare boys and girls to meet the demands for efficient service as members of families, and of vocational and civic groups. Perhaps the most noticeable indication of this slow, but certain reorganization is evidenced by the splendid relationships which now frequently exist in the same school system between separate courses of study for general educational purposes and for strictly vocational training values.[1] It is interesting to note that a large proportion of all teachers who reported regarding the practicability of imparting occupational information through their respective general and vocational courses stated their belief, with varying degrees of emphasis, (1) that pupils should have a general understanding of the nature of the work, methods of employment, and requirements for success in the important divisions of occupations (including the professions), (2) that they should have a fair appreciation of the problems and conditions confronting persons engaged in these positions, and (3) that they should become somewhat acquainted with the relative possibilities that are open in such pursuits.

The relative emphasis which these 143 cities of varying population are now placing upon school counselling, training programs, placement activities, and follow-up work likewise signifies marked differences in their respective provisions for educational and vocational advisement. Figure I shows the distribution of these public school systems in percents according to the general guidance activities provided. In other words, of these 143 departments or bureaus, 96 arrange to assist all pupils in studying and choosing vocational possibilities; 74 attempt to provide all pupils with educational guidance and vocational preparation; 134 provide systematic employment or placement systems; 11 provide systematic employment supervision or follow-up work.

It will be noted that, with few exceptions, these school systems have done little, but have planned much, in supervising the juniors' contacts with their employers. The most comprehensive programs have assumed some responsibility for advisement, placement, and adjustment of boys and girls (1) who are qualified for part-time work, (2) who desire positions upon leaving school, or (3) who

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[1] See Chapter I in Section II, which deals with vocational education for the industries.

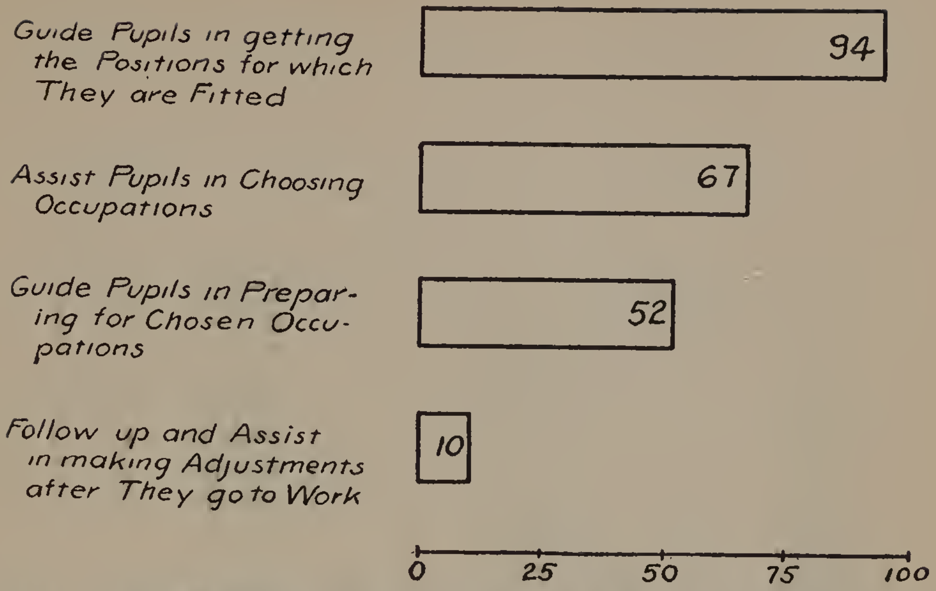

FIG. 1.—GRAPH SHOWING THE DISTRIBUTION IN PERCENT OF THE 143 PUBLIC SCHOOL SYSTEMS ACCORDING TO THE GENERAL GUIDANCE ACTIVITIES PROVIDED

wish to transfer to other employment. In addition to the permit-work or non-attendance cases, a few departments aid pupils in securing part-time employment while attending school, and likewise follow up and help in placing any person (from approximately 15 to 20 years of age) who may have dropped out of school. This system offers constant service in employment and training adjustment for junior wage-earners and serves as a clearing-house for information needed by the employers.

Figure 2 gives a graphical comparison for three years (1921, 1922, 1923) of the relative growth in school counselling and in placement work for all of these 143 school systems where both activities have been inaugurated and now exist in some form. Perhaps it should be stated that much of this recent growth in placement emphasis can be attributed to the co-operative efforts of the Junior Employment Service of the United States Department of Labor and the several state employment divisions. It is the purpose of the school systems, with the assistance of these agencies, to place the boys and girls in that type of work for which they are

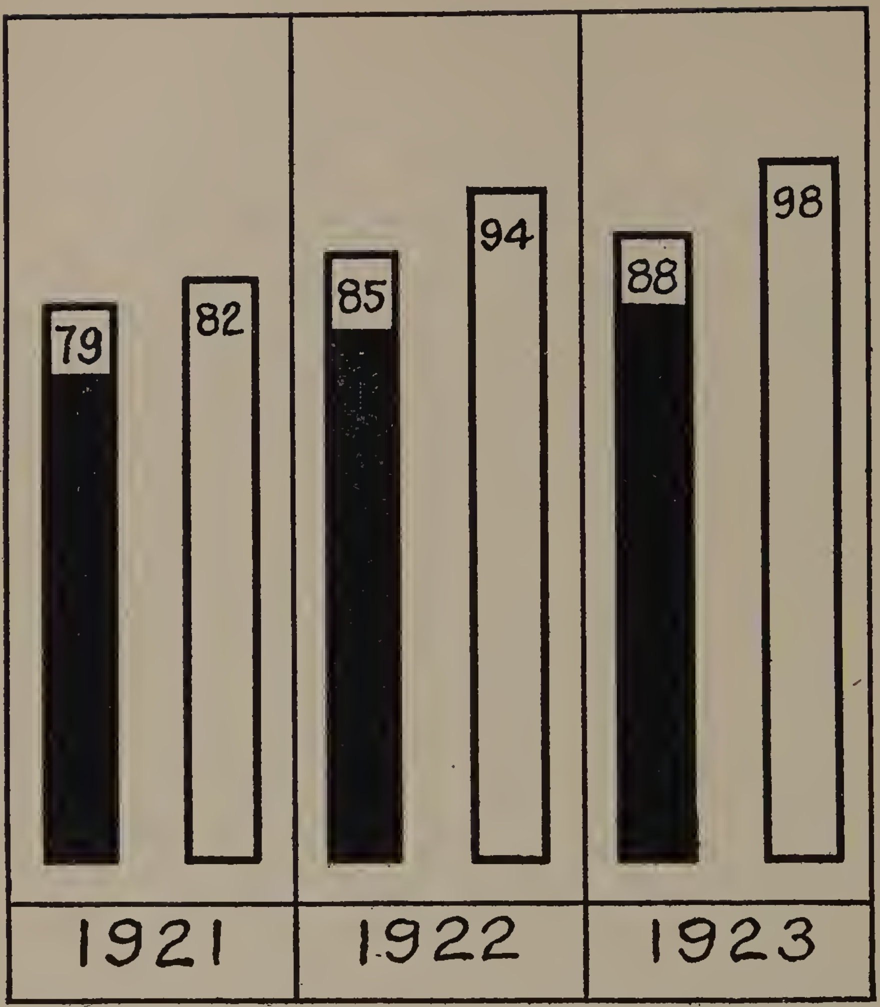

FIG. 2.—GRAPH SHOWING THREE YEARS OF THE COMPARATIVE GROWTH OF SCHOOL COUNSELLING (BLACK) AND PLACEMENT WORK IN ALL OF THESE 143 SCHOOL SYSTEMS WHERE BOTH ACTIVITIES EXIST

best fitted. Then, too, a few cases have been noted where systematic visits are made to places of employment to help to re-adjust junior workers who have outgrown their present positions.

However, as shown by the graphic representation in Figure 2, there are a number of cities which tend to conceive the vocational and educational guidance possibilities as limited almost entirely to the technique of placement. Their main concern seems to be that of finding desirable employment for those children who are taking out their working papers, rather than that larger problem of encouraging boys and girls to remain in school for training until they are sufficiently well prepared to choose and enter industrial, commercial, agricultural, household, or professional occupations adapted to their likes and abilities.

This near-sighted interpretation of the function of guidance in the public schools brings to mind an interesting report which recently came to our attention. A certain Western community, a number of years ago, became alarmed at the enormous increase in accidents on one of its highways where there was a dangerous turn above a steep precipice. The community, accordingly, caused a large hospital to be built at the foot of the mountain, with equipment to meet such exigencies as might arise. After several years of unnecessary inconvenience, suffering, and tragedy by travelers, it occurred to the authorities that remedial measures would eliminate almost all accidents. This was actually accomplished by building a strong fence at the top of the mountain beyond the turn of the highway in question.

In using this analogy, we have hoped to give a better appreciation of some of these problems which confront our committee and all others who have co-operated in collecting data and preparing reports for this *Yearbook*. It occurs to us that the strongest fence which might be erected to help prevent further misconception and misinterpretation in this rapidly developing vocational guidance movement, is to be realized from suggestively helpful statements of successful local programs. In the remainder of this chapter and the chapters which are to follow, we shall refer to several significant tendencies, but our reports will relate mainly to those progressive public school systems which are conscientiously endeavoring to develop adequate programs for educational and vocational guidance.

GUIDANCE EMPHASIS IN ELEMENTARY SCHOOLS

Although it is generally agreed that the exploratory activities (so-called 'finding' and 'try-out' experiences) and systematic guidance may well be postponed for the grades above the sixth, both psychology and observation indicate that children from six to twelve years of age are much concerned with the activities and situations in which adults are engaged. Many progressive teachers believe that there unquestionably is need in elementary education for work and study which involve an elementary interpretation of the many vital, but complicated occupational situations, conditions, and relationships that confront all citizens and consumers both early and late in life.

As would be expected, varying degrees of emphasis are being given to construction work and subject matter by the six elementary grades in the school systems investigated. "Nevertheless, with few exceptions, the 352 teachers interviewed report that they recognize the need for having the occupational considerations give some attention to each one of the following closely related experiences:

(1) Motor expression as a means of stimulating interest and mental activity, and of developing the muscles and senses to a reasonable degree (dexterity and discrimination);

(2) Information regarding common materials, processes, products, and developments to make pupils conscious of important divisions and relationships in their complex social environment;

(3) Situations involving some understanding of the human factors (problems, conditions, and meanings) in the workaday world to encourage thoughtful appreciation of the possibilities for social service and individual expression."[2]

As many as 94.7 percent of these teachers are committed to giving some time to a general understanding of the materials, processes, and problems involved in changing raw materials into more valuable commercial products. Several of them also state that the studies should be considered as a means for enriching or vitalizing several of the other school subjects. Questions concerning sources and preparation of materials, manufacturing processes, and the character and lives of the workers arise in a natural way, and where these are given proper attention, it is reported that they contribute materially to an intelligent understanding of present-day occupations. Excursions, moving pictures, exhibits, selected readings, discussions, and clubs likewise become important factors in the development of this study.

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[2] A. H. Edgerton. *Industrial Arts in Our Elementary Schools*, p. 23. Manual Arts Press, 1922.

Nearly all of these teachers seriously believe that occupational experiences should not merely limit pupils to either narrow or imposed tasks in handwork, but should offer sufficient opportunity for understanding and appreciating the worth of each activity and interest, as well as for allowing some freedom in meeting the difficulties which arise in developing their own problems. While it is important that the pupils learn to follow directions and conscientiously and accurately to perform those tasks which are assigned to them, it is agreed that these requirements should not be overemphasized to the sacrifice of that development in initiative which makes for the proper expression of personality in either group or individual situations. It is interesting to note that those teachers who are most insistent about this particular emphasis are the ones that have done most in presenting general occupational suggestion in a more or less systematic manner in their first six grades.

Guidance Activities in Junior High Schools

The rapid growth of intermediate schools and junior high schools represents a serious attempt to help *all* pupils, regardless of their social status or possible life work, to meet the new and changing demands for many-sided service as members of families and of vocational and civic groups. Such growing tendencies to respect group needs and individual differences in public education have resulted in various provisions for partial differentiation (from one-third to one-half of the school day) during the junior-high-school period.

This reorganization of upper-grade curricula aims to use all of the available resources in preparing children to make proper choices and adjustments, and to help them to determine their own future careers. Consequently, these schools are concerned with the number of boys and girls whom they succeed in encouraging to remain in school for training until they are sufficiently well prepared to choose and enter professional, commercial, industrial, household, and agricultural occupations adapted to their likes and abilities. These objectives assume that both social and psychological needs of early adolescence should be respected by giving appreciative insight into a sufficient number and variety of representative experiences to explore, discover, and develop tendencies, aptitudes, and abilities for understanding and doing, as well as managing and supervising occupational activities.

In keeping with this spirit, the most comprehensive of these junior secondary schools are concerned with problems of aiding their pupils in the following particulars through closely related instructional provisions:

(1) By broadening their understanding of economic production, to increase respect for different workers and their respective occupational pursuits;

(2) By preparing them for greater insight and wisdom in judging and using various resources, products, and services;

(3) By helping them to develop general appreciation and occupational intelligence in keeping with worthy citizenship;

(4) By offering them opportunity for testing interests and capacities as a basis for selection of desirable educational programs, for choices of suitable vocations, and for adjustments in actual employment.

Stark's[3] recent study dealing with the characteristics of pupils in grammar grades and high schools, with respect to readiness to undertake studies about occupations, leads him to conclude that there is a pretty general agreement that the age of serious thinking is a variable quantity under ordinary conditions, since the age of adolescence is a period of so much shifting and changing of ideas and attitudes. At the same time, by charting all of the reactions obtained and plotting the points for an age curve there appear to be three important periods for our consideration. The first centers about the age of 12, the second about the age of 15, whereas the third might be described as a period ranging from about 18 to 21 years or further described as the period of entering into, and trying out, actual occupational experiences. Then, too, we have Thorndike's[4] study on the resemblance between relative interests and relative capacities, and between interest in the last three years of the elementary schools and capacities in the college period, in which he concludes that the facts unanimously witness to the importance of early interests.

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[3] Wm. T. Bawden. *Studies About Occupations in the Public Schools.* United States Bureau of Education, March, 1923. Industrial Education Circular, No. 13.

Beginning in the seventh grade, the pupils in many cities of over 10,000 population are having short exploration periods in a number of unit courses involving interesting and profitable experiences, while they are continuing their studies in several subjects often with other differentiated groups of students. This plan, including reliable information and systematic counsel, frequently gives pupils, counsellors, and teachers some sane basis for the future adjustment of courses and the selection of life work. When the study of occupations is based upon factual material, rather than upon opinion, which naturally is variable, pupils are better enabled to enter their life careers with some vision of the vocational opportunities and employment requirements that constitute an intelligent choice. Experience in several schools has demonstrated beyond doubt that this procedure has been an incentive for causing a number of pupils to continue through the ninth grade and to enter the senior high school. In such cases it is reported that they usually choose courses more intelligently and make progress from the outset.

This guidance emphasis is favored by 301 of the 379 intermediate and junior high schools which have recently reported from 21 states on the different activities now being offered to their seventh-, eighth-, and ninth-grade pupils. The majority of these schools report that they are making no special attempt to emphasize proficiency in specific occupations as low as the seventh and eighth grades. This is mainly because of their increasing conviction that occupations offer little to boys and girls under sixteen years of age. During this period the chief emphasis is rather *to help all pupils to develop a reasonable amount of perspective and reasoning power in connection with life situations, as a basis for purposeful election of courses, proper choices of occupations, and later adjustments in employment.*

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[4] E. L. Thorndike. ''The permanence of interests and their relation to abilities.'' *Pop. Sci. Mo.*, November, 1912.

Over 67 percent of the 379 schools which were investigated include notable changes in their upper-grade curricula and also encourage the deferring of definite occupational selection as long as possible. The majority of the school organizations which favor semi-specialization in particular differentiated courses, either beginning with the second semester or at the end of the seventh grade, are located in cities of over 200,000 population. This indicates that the chief reason why nearly one-third of these schools now foster courses which are optional in name only, and which actually impose early choice upon their adolescent pupils, may be the administrative difficulty involved in offering a greater number and variety of activities to large numbers of pupils. In the reports from 303 of these schools, each of which gave its main reason for reorganization, the four leading claims, when collated, were found to be given the order of importance listed in Table II. It will be noted that ''aiding in the deliberate and wise selection of life occupations without encouraging early choices'' was voted as the second important emphasis of these four major claims by those representing the schools concerned.

TABLE II.—SHOWING THE MAIN REASON GIVEN BY EACH OF 303 SCHOOLS FOR OFFERING EXPLORATORY COURSES[5]

CHIEF EMPHASIS	SCHOOLS	
	Number	Percent
1. Contributing to all-round development, general experience, and intelligence	118	39
2. Aiding in the deliberate and wise selection of life occupations without encouraging early choices	101	33
3. Enriching the school experience of the pupil through concrete situations	78	26
4. Preparing in the school and through co-operation outside for direct entrance into vocations	6	2

The great majority of these 303 schools which reported on the educational and vocational guidance phases of their instruction expressed a striking need for presenting profitable experiences which are well adapted to the problems of revealing capacities and developing interests and powers, in keeping with the general aims and purposes of their respective junior-high-school organizations. Several schools even insisted that this objective could not be accomplished fully unless provision is made for freedom in choice and for individual experimentation.

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[5] (For more detailed statements see Edgerton's *Industrial Arts and Prevocational Education in Junior High Schools,* p. 16. Bruce Publishing Company, 1922.)

In addition to the studies of general conditions and problems in choosing life work and preparing adequately for it, other schools place much emphasis upon group excursions to local establishments, and student reports on investigations of type occupations. The best of these reports include such important considerations as nature of work, main advantages and disadvantages, qualifications and training needed, possibilities and requirements, remuneration, hours of work, seasonal demands, entrance age, time required to learn duties, permanence of occupations, and deficiencies of workers. Where reliable surveys are made and careful studies are provided, these student reports are invaluable in helping pupils to form sound judgments relative to the character and future of positions open to them. As the occasion requires it, pupils are brought into contact with reliable reading matter, unbiased specialists, or whatever other sources of information may be most needed at the time. In some cities, beginning with the seventh grade, simple, but effective, cumulative records are used advantageously, to record such inferences as teachers and others have based upon school performances and activities carried on outside of school.

It is believed by a number of these teachers and counsellors that the significance of the likes and dislikes which are fostered by pupils of this age, as well as their corresponding relation to abilities and inabilities, has an important bearing on the character of guidance and counsel to be given both during the period of school attendance and during the period of early employment training and adjustment. Although some promising psychological devices and tests[6] have been developed for measuring general intelligence, mechanical aptitude, general knowledge, trade knowledge, and skill, it is believed by a considerable number that there is no better method in use at present for discovering capacity related to the types of experience represented in the school than to observe the degree of success and failure resulting from each division of the school performance.

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[6] See Chapter VIII for detailed statements concerning objective measurements in educational and vocational guidance.

Knowledge of the employment possibilities and requirements for the various divisions of professional, commercial, industrial, household, and agricultural occupations is considered essential; however, the schools are not concerned merely with the suitability of children for given positions. In the last analysis, they insist that they are obligated to ascertain the suitability of such available positions for the boys and girls in question. Not only do some of the most progressive schools provide a broad program of studies with opportunity for each pupil to explore, discover, and develop any special capacity for understanding, doing, and managing projects, but they also furnish related information for maturing the pupil's judgment of present-day problems and relationships. In this study of 379 schools for example, it was found that only 86 schools, or approximately 23 percent of those investigated, have provided for a reasonable amount of technical, vocational, and occupational information in connection with their industrial arts or manual arts activities (see Table III).

TABLE III.—THE RELATIVE EMPHASIS GIVEN TO THREE TYPES OF RELATED INFORMATION IN THE SCHOOLS INVESTIGATED

Kind	Purpose	Number
Technical Information	For enlarging the understanding of tools, materials, operations, and principles directly related to the shop work.	147
Vocational Information	For illuminating the school experiences by giving insight into commercial processes and methods employed in economic production.	112
Occupational Information	For helping to appreciate and judge labor conditions, importance of work, health problems, future opportunities, remuneration, qualifications and training.	86

GUIDANCE ACTIVITIES IN HIGH SCHOOLS

The detailed provisions for vocational and educational guidance in the 379 junior high schools and the 256 high schools which were investigated, are shown in Table IV. With few exceptions, these guidance activities are provided with some supervision and assistance from central bureaus or departments of the board of education. In a few cases, however, the assistance is provided in co-operation with other agencies.

When collated, these data for the 635 secondary schools were found to correspond closely in detail with the results of McDougall's study[7] of vocational guidance in 130 high schools, representing 32

TABLE IV.—DETAILED PROVISIONS FOR VOCATIONAL AND EDUCATIONAL GUIDANCE IN 635 SECONDARY SCHOOLS (379 JUNIOR HIGH SCHOOLS AND 256 HIGH SCHOOLS)* THROUGH ASSISTANCE FROM BUREAUS, DEPARTMENTS, AND OTHER AGENCIES†

GUIDANCE ACTIVITIES PROVIDED	SCHOOLS USING SERVICES	
	Number	Percent
Surveying local occupational opportunities and requirements to some extent	244	38.5
Studying results of these data and other reports of investigations	171	27
Testing pupils' abilities and interests in various ways	212	33
Assisting individual pupils in choosing vocational possibilities	351	61
Offering vocational training programs	489	77
Assisting all pupils in selecting educational possibilities	537	84.5
Offering vocational placement for part-time and full-time employment	440	68
Providing some form of employment supervision and follow-up	195	31

*The schools which defer occupational considerations until late in the high school period are dealing with selected groups of pupils.

†It is interesting to note that marked differences do not exist at present in the content and method of the guidance activities in the majority of these junior and senior schools.

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[7] H. R. McDougall. "Vocational guidance in high schools." *Industrial Arts Mag.*, April, 1922, 133-135.

states. The detailed summary of the reports from this study is as follows:

> Fifty-four schools have available reports of surveys of local occupational opportunities; 46 schools report prevocational courses or vocational guidance in Grades VII and VIII; 81 schools make an organized effort to discover vocational aptitudes through work in English; 54 schools require or urge teachers to act in the capacity of vocational counsellors; 34 schools offer courses in vocational civics or ''occupations''; 31 schools use a text in the study of the occupations; 68 schools require written reports on local industries or other assigned vocational topics; 75 schools organize class excursions to local industries and commercial establishments; 51 schools employ a director or special teacher responsible for vocational guidance; in 62 schools this work is handled by the principal, and in 26 schools by the deans of boys and girls; 97 schools offer some special vocational courses; 86 schools have employment or placement bureaus, and 43 function through central bureaus, usually under the direction of the board of education; 43 schools report employment supervision and follow-up work; 36 schools make some use of mental tests as an aid in determining vocational aptitudes.

Those who have participated in the slow, but certain reorganization and development of these activities for general educational purposes, aside from specific wage-earning preparation,[8] are well aware that the new developments in the seventh, eighth, and ninth grades are forcing the discontinuance of similar objectives and activities in the high schools throughout the United States. With the increased vocational emphasis in the senior high school, which is assumed by the 'self-finding' emphasis in the intermediate or junior-high-school organization, it is often reported that certain related occupational knowledge is either necessary or desirable as supplementary training for those secondary school pupils (1) who seek understanding of and insight into local occupations as a basis for future promotion in commercial, industrial, and allied callings; (2) who desire occupational perspective as a part of their training for leadership in business and industrial pursuits; (3) who wish an overview of the occupations to equip themselves better for professional or semi-professional careers.

In answer to this challenge, several of the senior high schools studied have arranged training programs of part-time co-operation for those who expect to enter occupations of a secondary rather than of a professional grade. This instruction, which is designed primarily for those who are preparing for direct entrance into occupational pursuits, including semi-professional callings, or who are returning for specific extension work, aims to give a high degree of skill or at least to add to the trainee's technical efficiency. Again, it is usually recognized that the most urgent need for the majority of pupils between twelve and sixteen years of age is not so much for a high degree of manipulative skill as it is for reliable information with which to judge the present conditions, opportunities, and limitations in available occupations. Where the best results have been obtained, these courses are paralleled by systematic studies of real productive pursuits rather than by mere textbook acquaintances (see Table V).

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[8] See Chapter I in Section II for reports on industrial education.

TABLE V.—OUTLINE FOR THE STUDY AND DISCUSSION OF OCCUPATIONS
(Devised and Used by Vocational Counsellors* in
Cass High School, Detroit, Michigan)

1. Importance

How does this occupation contribute to the welfare of society?

2. Historical background

How has this occupation grown and changed?

3. Tasks

(1) What are the main branches, departments, or types of work in this occupation?
(2) What things are actually done by persons in this occupation?

4. Economic conditions

(1) Opportunity for learning; for advancement; for initiative
(2) Remuneration
(3) Steadiness of work: Does it fluctuate by season, week, or day? Plan for vacation?
(4) Hours
(5) Health and safety
(6) Size of this industry or business:
    (a) Number engaged in it in this community
    (b) Comparison of importance here and in other communities, as measured by number engaged in it, value of product, and capital invested
    (c) Estimate of its future development and demand for workers, local and general
(7) Organizations of employers and employees

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*Gladys Little and Sherman Wilson are directly responsible for this plan.

5. Preparation

(1) What education or training is necessary or desirable?
(2) What experience is required? What kinds of work lead up to this occupation?
(3) To what other occupations might this one lead?

6. Qualifications

What special qualities are required for success?
  (a) Physical
  (b) Mental
  (c) Moral or character qualities

7. Advantages and Disadvantages

Based on total previous discussion, especially economic conditions

8. Relation to the Community

(1) What other occupations are similar or related to this one?
(2) Does this occupation help the worker to have a good life as a citizen and as an individual?

However, a comparatively large number of these schools insist that the pupils can be given enough freedom in choice and specialization in representative experiences to help many in the tentative selection of their life work and to help some in the beginning of their preparation for it. It would seem that the vocational studies and more specialized courses which are designed in part to test and develop interests and capacities for understanding and doing occupational work do tend to contribute more toward the vocational efficiency of pupils during the ninth and tenth grades. If desirable, this would seem to be the psychological and physiological time to place somewhat greater emphasis upon technique and the related technical knowledge. As a result of the various exploratory experiences during the seventh and eighth grades, some pupils are found taking more intensive work in activities already started, while others prefer to investigate new fields of work or experiment with selected problems. This practice likewise is observed in several of the schools which take the attitude that while some pupils will not be adapted to industrial, commercial, and allied occupations, either in interest or ability, all should have more or less acquaintance with, and understanding of, productive pursuits as to their importance, conditions, and relationships, merely as a part of their general education.

GUIDANCE EMPHASIS IN PART-TIME OR CONTINUATION SCHOOLS[9]

As the efficiency of part-time education depends to a large extent upon the development of an effective system of co-ordination and guidance for paralleling the individual instruction, the counsellor provisions usually are considered an important part of the programs for both boys and girls in continuation schools. Following the general exploratory courses and occupational considerations in the intermediate or junior high schools from which these junior workers have come, the studies, interviews, conferences, and talks in continuation schools are usually reported to become more intensive and to give increasing attention to the presentation of facts in keeping with the varied interests and abilities of the learners. To meet this urgent need for extending school service, a growing number of schools are including worth-while investigations and analyses of local occupational pursuits, in order to secure up-to-date information concerning current conditions and demands. There is a general belief that for the vast majority of pupils of compulsory attendance age, one of the most urgent needs to-day is for sufficient first-hand information with which to judge relative requirements and opportunities in suitable callings or vocations.

In a large number of the 178 part-time schools investigated the teachers, sponsors, and counsellors provide individual and group conferences for stimulating all pupils enrolled. Again, the success of this part of the vocational guidance program seems to be determined largely by the training and experience of those in charge, as well as by the provision made for collecting and imparting the information involved. In addition to the general considerations in choosing an occupation and preparing adequately for it, first-hand surveys of local establishments and reports on investigations of typical divisions in occupations are helping many pupils to form sound judgments concerning the character and the future of positions which are open to them.

The main types of guidance provided for these junior workers by teachers, counsellors, and co-ordinators in the 178 part-time

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[9] See the chapter in Section II dealing with reports from several part-time schools.

TABLE VI. MAIN TYPES OF GUIDANCE ACTIVITIES PROVIDED FOR PUPILS BY TEACHERS, COUNSELLORS, AND CO-ORDINATORS IN 178 PART-TIME SCHOOLS

KINDS OF GUIDANCE OFFERED	PART-TIME SCHOOLS	
	Number	Percent
Initial interviews, and conferences for classifying pupils and for encouraging serious consideration of occupational problems	149	83.5
Follow-up and adjustment of pupils	55	31.0
Group meetings for talks by specialists	82	46.0
Related vocational information imparted through courses and activities in social science, English, etc.	109	61.5
Co-operative checking of students' records	39	22.0
Co-operation with all agencies which reach parents and children, or investigate home and working conditions, etc.	137	77.0
Co-operation with placement officers and co-ordinators	123	69.0

schools investigated, are shown in Table VI. It will be noted that a wide difference in emphasis is being given by these junior continuation schools to the several kinds of guidance offered in a few of them. For example, occupational information or vocational guidance instruction is considered of first importance by certain schools; others give more stress to the continuation work which has a direct relation to the progress of the individual on his job; still others give major attention to the vocational instruction for specific training in commercial or industrial pursuits. In several cases the co-ordinators, with the aid of the teachers and counsellors, have successfully connected the school activities with those of the occupational pursuits. These co-ordinators, visiting the boys and girls where they are employed, check up their progress in school and in employment, recommend adjustments in school courses to meet the needs of industry, assist in laying out training courses in employment to parallel the school work, and, when a child is found to have outgrown a job, recommend desirable changes in employment.

In most large cities it is reported that literally thousands of boys and girls have had several unsupervised jobs during two or more years of working experience, most of which have offered comparatively little in employment training and adjustment that will help them to choose suitable educational opportunities or life work. At its very best, considering that work has been selected in an occupation which seems to offer good opportunities, the determining factor of success usually depends upon whether or not the junior worker makes good and likes it well enough to continue. As a result, it is no wonder that so many junior wage-earners (considerably over 90 percent in some junior employing establishments) fail in one position after another, until they finally manage to succeed sufficiently well to remain in one. Such a method of trial and error cannot be otherwise than extremely wasteful to all concerned, as it postpones the child's decision until it is usually too late to choose educational opportunities wisely in the secondary school.

Summary and Conclusion

The school guidance and counseling activities that have been enumerated for different levels of learning may be grouped as follows:

I. Collecting occupational information and making it available to pupils:
    (1) Through central office surveys, source bulletins, opportunity literature, etc.;
    (2) Through contact with employment problems of junior workers, etc.;
    (3) Through excursions, reports, posters, and charts for showing industrial opportunities, moving pictures, etc.

II. Interviewing and conferring with pupils, parents, and others concerned in order:
    (1) To assist in the selection of courses of study and training programs;
    (2) To assist pupils in the study and choice of vocations;
    (3) To assist those planning to drop out of school through the services of the placement bureau;

(4) To consider failures referred by scholarship committees or others to determine cause and possible remedy for same;
(5) To assist pupils desiring change of school subjects or programs;
(6) To provide groups with (a) talks on occupations in general, and (b) talks for those interested in specific vocations;
(7) To counsel students desiring working permits for steady employment, for after school work, etc.;
(8) To follow up and help adjust graduates and former students, etc.

III. Contributing to curriculum building and the adjustment of pupils to meet occupational needs and interests.

IV. Recording results of school performance and measurements:
(1) By adapting records (psychological tests, self analysis, cumulative data) to educational and occupational needs;
(2) By keeping records of case studies, etc.

V. Acquainting the public with educational problems:
(1) Through contact with prospective students;
(2) Through parent-teacher organizations;
(3) Through newspapers, industrial organizations, commercial clubs, etc.

Even a tentative choice of an occupational pursuit assumes the successful completion of the required preparation. To be sure, it is possible for the vocations themselves, to provide individuals with varying degrees of opportunity for understanding and doing work in several occupational pursuits; but this often requires that they must either fail or become dissatisfied with one kind of work before they can be tried out in another. The fact that boys and girls do like and succeed in the work of their first, second, or third choices is by no means satisfactory assurance that they have chosen the respective occupations for which they are best suited, since the important bases for comparing the opportunities and requirements, in terms of significant likes or dislikes and abilities or inabilities, too often are decidedly limited or entirely lacking. In cases of failure, it is quite possible that the loss of confidence, which children sometimes experience at these times, has a depressing effect upon their attitudes toward other positions.

At any rate, this plan either fails completely to give a background of experience for making satisfactory choices and adjustments or it succeeds in a fashion after a long-drawn-out process of elimination. Even though it were possible for inexperienced junior wage-earners to make their own selections of occupational pursuits, which is seldom true, they are certain to lack that background of information and experience which can help them in judging and choosing life careers somewhat intelligently. It will be noted that a number of the wide-awake schools report they are preventing just such emergencies in their junior high schools, high schools, and part-time schools, by providing systematic guidance and counsel through both exploratory experiences and occupational studies for some time before their pupils leave school. The detailed statements and reports in the following chapters should challenge all to test and develop appropriate methods of procedure.

CHAPTER II

A STATE PLAN OF EDUCATIONAL AND VOCATIONAL GUIDANCE

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I. INTRODUCTION

A. Is there a Need for a State Program of Guidance?

To make this question a little more specific we may ask: What service in the field of educational and vocational guidance can a state department of public instruction render that will not be as well or better accomplished if left entirely to local initiative or to other agencies already in operation?

Assuming that there is a need for guidance service to the boys and girls of our rural communities, villages, and boroughs, as well as to the children of our cities, and that teachers, as well as principals and counsellors, should have this guidance point of view, the following may be emphasized:

1. *Teacher training courses in guidance* for teachers in training and teachers in service can be promoted more effectively by a State Program, and, if desirable, these courses can be made a requirement for certification. This field is distinctly a responsibility of the state.
2. *The promotion of guidance activities* in local districts can be effectively stimulated through the medium of state and county educational gatherings, and through field work of a state department staff in co-operation with guidance leaders and educational administrators.

B. Beginnings of the Pennsylvania Guidance Program

The guidance program came about largely by way of a vocational guidance approach. Vocational guidance was included as an activity of the Bureau of Vocational Education of the Pennsylvania Department of Public Instruction in 1915. Through lack of time and funds, however, work in this field was limited to visits to centers engaged in this work, and annual reports on these centers to the Superintendent of Public Instruction. In 1920 the writer, at that time in the Vocational Guidance Department of the Pittsburgh Public Schools, was appointed one of three state supervisors of industrial education and shortly afterward was assigned to vocational guidance as a part-time activity.

A study of the guidance problem in Philadelphia, Pittsburgh, Erie, Harrisburg, Johnstown, and smaller communities followed, and showed in particular the need for some plan whereby the teacher might be linked up more closely with school counselling.

A greater appreciation of the extent of this field came in the early months of 1921 through the work of Dr. Francis N. Maxfield, Psychologist and Director of the Department Bureau of Special Education. Dr. Maxfield emphasized the importance of individual differences during pre-school years and a definite recognition and treatment of these differences upon school entrance and in the years following.

In May, 1921, the writer prepared an outline for a comprehensive program of guidance, which was presented at a conference of Department bureau directors and specialists, with the request that a committee[1] be appointed to develop a program and prepare necessary bulletin material.

C. The State Advisory Committee on Guidance

In addition to the co-operation of guidance specialists of the state, it is desirable to have similar service from men and women representing general school administration and teachers in typical county, city, borough, and rural community organizations. A state committee[2] combining these two elements also helps to promote the development of guidance institute programs, other aspects of teacher training in guidance, and the development of the program in local school districts.

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[1] On this committee the Superintendent of Public Instruction has appointed the following: Dr. J. Lynn Barnard, Director of Social Studies; Miss Muriel Brown, Assistant Director, Bureau of Special Education; Owen D. Evans, Assistant Director, Bureau of Vocational Education, in charge of Continuation Schools; James M. Glass, Director of Junior High Schools; Dr. Francis N. Maxfield, Director, Bureau of Special Education; Dr. A. L. Rowland, Director, Teacher Bureau; H. L. Holbrook, Supervisor of Industrial Education, Chairman.

D. The Pennsylvania Program—In an Experimental Stage

One of the outstanding features—the starting of local guidance programs under local leadership and without provision of time out of school hours—has been incompletely demonstrated. Each of five 'try-out' communities has needed more leadership from the Department of Public Instruction than would be available, if more communities were to be served.

On the other hand, the experience gained through starting guidance programs in these communities, already under maximal teaching load pressure and lack of adequate clerical assistance, will enable us to help develop the work elsewhere with an expenditure of much less time.

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[2] The following have been appointed by the State Superintendent of Public Instruction, as the State Advisory Committee on Guidance:

General Appointments
- Frank M. Leavitt, Associate Superintendent of Schools, Pittsburgh.
- Anna B. Pratt, Director, White-Williams Foundation, Philadelphia.
- Dr. Edward Rynearson, Director of Vocational Guidance, Pittsburgh.
- Dr. George Wheeler, Associate Superintendent of Schools, Philadelphia.

County Schools
- G. A. Grim, Superintendent, Northampton County Schools.
- C. W. Lillibridge, Superintendent, McKean County Schools.

School District Superintendencies
- H. R. Vanderslice, Superintendent of Schools, Coatesville.

University Teacher Training
- Dr. Arthur J. Jones, University of Pennsylvania.

Normal Schools
- Dr. Helen B. Trimble, East Stroudsburg Normal School.

Collegiate Guidance and High-School Articulation
- Thyrsa W. Amos, Dean of Women, University of Pittsburgh, representing the Pennsylvania Association of Deans of Women.

City High Schools
- Dr. C. B. Fager, Jr., Harrisburg.

Borough High Schools
- H. W. Slothower, Mt. Union.

Junior High Schools
- D. D. McMaster, Johnstown.

High-School Counseling
- C. F. Brockway, Erie, Pennsylvania.

Continuation Schools
- Caroline M. Reedy, Reading, Pennsylvania.

Elementary Schools
- Kate Barnes, Assistant County Superintendent, Mercer County.

Surveys of the local guidance field in a given community and the development of guidance projects by teacher committees probably will come after a series of teacher conferences on guidance, and after organization of simplified guidance bureaus. The indexed cumulative envelope, which has been used, has not been tried sufficiently to show what modifications may be needed, nor has its range of effectiveness in grades and high schools been determined.

E. Acknowledgment

The general program of educational and vocational guidance has been made possible by the unstinting co-operation of members of the Department Committee on Guidance, other members of the staff of the Pennsylvania Department of Public Instruction, the State Advisory Committee on Guidance, school districts with guidance activities already organized, and the school districts co-operating in the trial of the program. No less is it due to provision made for it by Mr. L. H. Dennis and Dr. F. Theodore Struck, Director and Assistant Director of the Vocational Bureau of the State Department of Public Instruction, to which this activity has been assigned.

II. Fundamental Concepts

After a preliminary study of the field, the following controlling principles became evident:

1. *Guidance should have all the objectives of education in view;* including citizenship, worthy home membership, health, ethical and moral character, worthy use of leisure, vocations. To these, listed as kinds of guidance, should be added curriculum guidance.
2. *The participation and co-operation of teachers should be secured.* The present tendency to emphasize subject instruction and organization of school work on a departmental basis has made teacher and pupil relationships too impersonal. Therefore, in order to bring about a greater sensitiveness to pupil needs and interests, a guidance program should provide for the participation of teachers.

   All departments of education are concerned, including compulsory attendance, health, and other special activities.

Therefore, department heads, supervisors, principals, and other administrators should participate in the making of guidance plans, as well as in carrying them out.

Various agencies of the community have a service to render. These often can assist in the starting of a program, as well as in its development, and should be utilized providing there is no undue obligation involved to serve special interests.

3. *The program should be within reach of the average community.* The starting of a guidance program must not depend upon the services of skilled counsellors, but in most cases will have to come about through local realization of the importance of the work, and develop ultimately through adequate financial support. Guidance in many of the smaller communities, for a long time to come, of necessity may be restricted to the efforts of principals and teachers having heavy classroom assignments.

III. A TENTATIVE GUIDANCE PROGRAM

A. Main Factors in the Pennsylvania Guidance Program

Briefly, these are as follows:

1. *The formulation of main principles and objectives* in the field of guidance.
2. *The trial of these principles* in their adaptations to various types of communities.
3. *The development of guidance material* for the use of teachers and administrators based on these trials.
4. *A teacher training program,* to include professional reading groups in school units, institute programs emphasizing guidance, extension and residence courses in normal schools and collegiate institutions, and graduate courses in collegiate institutions for training guidance specialists.

B. Formulating a Tentative Program, Based on Fundamental Concepts

1. *Guidance Should Have All the Objectives of Education*

a. *Terminology.* In order to impart this wider conception of guidance, it was found necessary to clarify the terminology of guidance. Upon analyzing the various ways in which the terms ''educational guidance'' and ''vocational guidance'' are used, it was found that in some cases the words ''educational'' and ''vocational'' are used to denote the *medium* through which guidance is given and in other cases to denote the *objective* toward which guidance is given. For example, some writers termed the vocational guidance given as part of a lesson in English, educational guidance. In this case the lesson in English is the medium and vocational guidance the objective.

b. *Guidance should be named from its objective.* To avoid the confusion known to exist among teachers and administrators it was felt that one term should be consistent with another. The objective seemed to lend itself best to this purpose and was adopted to give name to kinds of guidance.

In accordance with this plan, ''educational guidance'' means ''guidance toward education.'' Dr. Arthur J. Jones, of the University of Pennsylvania, suggested the term ''curriculum guidance'' as being more definite. This was found to be understood by teachers much more readily than educational guidance (which in the minds of many connoted vocational guidance) and was adopted. The word guidance was adopted as an inclusive term.

2. *The Place of Guidance in Education*

To show the place of guidance in an educational program, the following phases were marked:

a. *Guidance as a phase of subject instruction.* All school subjects were recognized as having guidance value, and in the main comprising two elements, fundamental principles and processes, and guidance, with even the fundamental principles and processes having guidance value if having significance in present or future conduct.

b. *School activities.* School activities were recognized as having marked guidance value, if properly conducted.

c. *Case work.* This was recognized as including school counselling, placement, and home visiting, the more highly specialized aspects of guidance.

3. *Participation and Co-operation*

School guidance committees, school guidance projects, and professional reading and discussion programs, conducted as a faculty or teaching staff activity, seemed to offer possibilities. The organization of these school committees into a general school council gives opportunity for school committees to have a voice in the making of plans affecting the entire school district, as well as to enable them to carry out these plans more enthusiastically when the details applying in each school are to be put into operation.

The participation of department heads, (including compulsory attendance, health, vocational education, art, etc.), principals and associate superintendents might best be provided by a central committee, in which the council of school guidance committees would be represented.

It was believed that while associations representing some special fields of activity in a local community might be able to finance the appointment of school counsellors and placement officers, other considerations might in some cases make it desirable to adopt a slower development of guidance. It was recognized, however, that the interest and the support of the community is essential to the ultimate development of a significant program.

4. *A Guidance Program Within Reach of the Average School District*

a. *Types of school districts.* Consideration of school districts in terms of possible guidance organization was found necessary. With this point in view, school districts of the state were considered subject to the following divisions: (1) school districts able and willing to install school counsellors assigned full-time to this work; (2) school districts financially able to employ trained counsellors under adequate leadership or to assign teachers to this work, but needing public interest and support before the movement can be supported by school boards; (3) school districts so small or under such financial stress as to necessitate postponing indefinitely the assignment of teachers or trained workers for part or full-time counselling.

b. *A flexible program.* A canvass of the situation showed that there are very few school districts in the state that can start a program that involves the immediate employment of counsellors on either part-time or full-time. In a number of cases local organizations indicated a willingness to finance such a start. The superintendents, however, felt that it would be better for them to develop a sentiment for such a program and later install counsellors entirely under their own direction.

It became evident that the program must be adapted to the second and third types of districts, with two stages of development, as follows: (1) guidance organized on a committee basis, without the provision of experienced counsellors or teachers assigned part or full-time to counselling and guidance leadership; (2) guidance organization having the co-operation and support offered by committee organization and teacher participation, and in addition having the services of specialists or of teachers who have had time and training sufficient to become expert.

It was recognized that while the first of these stages must of necessity suffice indefinitely for many school districts, it had the advantage of stimulating the interest of teachers and others in the schools, and arousing public interest and adequate financial support.

c. *Committee organization.* The committee organization, with or without trained counsellors, was considered *basic for both stages,* and comprises the following: (1) *a steering committee,* composed of school administrators and supervisors, or in a large system representatives from their number. The chairman of this committee may be the superintendent of schools, or another leader in the school district, or the director of guidance; (2) *school guidance committees* in secondary schools and representatives from each of the elementary schools. These altogether form a *general school council,* the chairman of which may be the director of guidance; (3) *project committees* for the development of guidance material and special programs pertaining to local school units and the community. These include teachers, and function for the duration of the projects.

C. Trying Out the Program

Harrisburg, Hazleton, Franklin City, and Mount Union were selected as being typical school districts, and because of their interest in this problem. Franklin County centers have recently been added.

1. *Harrisburg*

Harrisburg is the capital city, with a population of 82,000. The public school system has two senior high schools, two junior high schools, twenty-five elementary schools, and one open-air school. There are 14,000 pupils and 426 teachers. Dr. Clyde H. Garwood is superintendent of schools, succeeding Dr. F. E. Downes on March 1st, 1923.

Preliminary steps were taken in developing the guidance program in Harrisburg in January, 1922. Dr. C. B. Fager, Jr., Principal of the Technical High School, was then elected chairman of the central committee, and Miss Maude I. Gamble, supervising principal of three elementary schools, secretary of the central committee. Mr. Francis G. Wilson, instructor in the Technical High School, who had been giving additional hours for placement work, was elected general chairman of the school committees, and Miss Julia Ryan, a teacher in the Edison Junior High School, secretary. On the death of Miss Ryan she was succeeded by Mrs. Nettie B. Fox, who for nine years has been girls' adviser in the Central High School for Girls.

The guidance program was begun with a survey of the guidance field, and for this purpose the general council of school committees was divided into the following sub-committees:

1. Curriculum guidance.
2. Personal analysis, tests, and measurements.
3. Avocational, moral, and social guidance.
4. Occupations and vocational information.
5. Community co-operation.
6. School bureau organization, records, and reports.

Upon completion of these reports a series of projects was assigned to each of the four secondary schools, with each member of a school guidance committee serving as a project chairman. The following are twenty-two of the twenty-four projects assigned, consisting of informational and other material for use in the schools:

1. Scholarships.
2. Co-operation with semi-religious, philanthropic and charitable organizations.

3. From the employer's point of view.
4. How to study.
5. Information for prospective college students.
6. Collegiate catalogs and displays.
7. Home visit record.
8. Co-operation with organizations representing occupational interests.
9. Vocational opportunities in the Harrisburg district.
10. Intelligence tests in the guidance program.
11. Courses of study in Harrisburg High Schools.
12. Class visits to higher schools.
13. Co-operation with federal, state, and city departments and bureaus.
14. Inspirational literature.
15. Occupational literature in Harrisburg schools and libraries.
16. Self-analysis forms.
17. Avocational literature.
18. Co-operation with civic and neighborhood organizations.
19. The placement problem in Harrisburg.
20. Cards and leaflets to parents.
21. School preparation for specific vocations.
22. Teacher estimate.

Nearly all of these projects have been completed and are being printed at the school print shops.

Dr. Garwood was greatly interested in guidance activities while associate superintendent of the Pittsburgh schools and has given strong support to the program here. This has resulted in the assignment of Mr. Francis G. Wilson, general chairman of the school committees, to guidance activities for half-time, beginning in September.

The superintendent plans to have provision made in February, 1924, for the full time of Mr. Wilson, and for the full-time assignment of the chairman of the school guidance committees in the two junior high schools, Edison and Camp Curtin. The fourth high school, Central High for Girls, already has such an assignment.

A central placement bureau is being organized as part of the program, and will be under the immediate supervision of Mr. Austin Miller, Director of Compulsory Attendance, and operated in connection with his office.

A very simple type of guidance organization is to be introduced in the elementary schools in September, 1924, that will include the use of the indexed cumulative envelope developed by the Department of Public Instruction. One representative of the teaching staff from each elementary school probably will be included in the general council of school committees.

Various business, collegiate and welfare organizations are cooperating with school committees, and a professional reading and conference program in guidance is planned for secondary school teachers during this year.

2. *Hazleton*

Hazleton has a population of 32,500, with its business chiefly centered around anthracite mining and textiles. In its public school system it has one senior high school, two junior high schools, twelve elementary schools, 7,250 pupils, and 208 teachers. Mr. A. D. Thomas is superintendent of schools.

Preliminary steps in guidance organization were taken in February, 1922, and an attempt was made to follow as exactly as possible the procedure outlined for the Harrisburg tryout. Mr. Ward D. Jordan, supervising principal of the senior high school, was elected chairman of the central committee, which in this tryout was composed of all administrators and supervisors. Mr. Frank D. Munroe, instructor in English in the senior high school, was elected general chairman of the school guidance committees. The latter included four members of the teaching staff of each of the high schools, and one from each of the elementary schools.

Sub-committees of the school council undertook a survey of the field as in Harrisburg. With the inability of the chairman of the State Department Committee to work with these committees in the development of details, because of the distance from Harrisburg, and with no one in the local schools trained in this work, it soon became evident that a survey was not the right approach.

Guidance projects were then organized with members of school guidance committees as chairmen. These have been completed and are being printed in the vocational department print shop. A very simple type of guidance bureau has been organized in each of the secondary schools and in three elementary schools. These are in charge of guidance committees, and special assignment of teachers for part or full-time counselling has not yet been made. The principals of all the schools including the senior high school have teaching schedules, and it may be some time before teachers or others can be released for special work in guidance. A central placement bureau has not as yet been organized, but probably will develop in the administration building.

3. *Franklin*

Franklin, a city of 10,000, is the county seat of Venango County, and concerned chiefly with oil refining and allied industries, and manufacture in metals. In its public school system it has one four-year high school and six elementary schools. A junior-high-school program is in the promotional stage. Franklin has 3,000 pupils, and 75 teachers. Mr. C. E. Carter is superintendent of schools.

The guidance program in Franklin was begun subsequent to the work in Hazleton. Taking advantage of the experience gained in the other trials, the program was made as simple as possible. All the principals and supervisors, totaling fourteen, were included in the central committee, of which Miss Adda McBride, Principal of the Union School, was elected chairman and Miss Margaret McNeil, Supervisor of Penmanship, secretary. Dr. G. Morgan Davis, instructor in social studies, was elected chairman of the council of school committees, and Miss Dorothy Elliott, high-school librarian, secretary.

Six projects were chosen and have been completed. School bureaus are in process of organization and guidance conferences are planned for the year. The principals all have teaching schedules, and the assignment of part or full-time for school counselling is a matter of the future.[3] The high-school bureau probably will develop as a central placement bureau. The indexed cumulative envelope and simplified forms developed by the Department of Public Instruction are being used.

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[3] Dr. Davis has since been given part-time assignment to guidance activities.

4. *Mount Union*

Mount Union, in Huntington County, has a population of 4,750, with brick yards and trade with the surrounding rural community as its major business. Mr. C. C. Smith is supervising principal. There are two schools; a high school housing a junior and senior high school, and an elementary school. There are 1200 pupils and 29 teachers. The central guidance committee is composed of the supervising principal, principals of the senior and junior high and elementary schools, the attendance officer, and visiting nurse. The supervising principal is the chairman of this committee. The principal of the high school, H. W. Slothower, who has a teaching schedule, is chairman of the combined committees of the two schools.

Mount Union has completed the seven projects it selected and has organized a guidance bureau in the high-school building, using the indexed cumulative envelope and simplified forms.

5. *Franklin County*

Trials of guidance in Franklin County have been recently organized under the direction of Miss Hannah A. Kieffer, Director of Rural Education at Shippensburg State Normal School[4] and Mr. J. L. Finafrock, County Superintendent of Schools. This center was chosen because of the leadership available, and its proximity to Harrisburg. With the wide range of interests represented by the various counties of Pennsylvania, no one county can be said to be typical. Franklin County is largely concerned with general farming and fruit growing. The schools in this trial consist of a township group of one-room schools and one two-room school under the leadership of a teacher in the latter, and a modern consolidated rural school. These schools include the Southampton Township Schools, consisting of ten one-room schools in the open country and a two-room school located in Orrstown, a village of 217 people. The teacher in the upper room of the Orrstown school, Mr. S. R. Zullinger, acts as supervisor of the township schools, in such time as he can find outside of school hours. He has a full teaching schedule. The program in this group will be tried out first in Edgewood, a community having 18 school children in a one-room building, and

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[4] Dr. Ezra Lehman is the head of this institution.

Sunny Hill, a community having 22 pupils in another one-room building, and in the Orrstown school. The Fayetteville Consolidated Rural School, Mr. Reese Bert, Principal, is located in Greene Township. It is a new brick five-room building, constructed along modern lines, and includes an assembly room that is also used as a gymnasium and community auditorium. This school takes the place of a group of one-room buildings which the children attended until a year ago.

D. How the Controlling Principles Operated in Actual Trial

1. *Guidance Should Have All the Objectives of Education*

Our progress so far has shown that this concept is practicable as well as theoretically sound. Teachers and administrators have readily grasped the idea of guidance as the individual boy and girl emphasis in education, whether in subject instruction, school activities or school counselling. The need of such an emphasis has been apparent particularly to teachers having many pupils on a departmental plan of subject instruction. Recognizing the vocational guidance value of a course in occupations, teachers have also come to see that any course of study that deals with life situations and points the way to present and future conduct and action has guidance value, whether it involves health, citizenship, worthy use of leisure, character, vocation or other objectives of education.

2. *Participation and Co-operation of Teachers Should be Secured*

Representation of the teaching body by school guidance committees, and inclusion of all administrators in a central committee on guidance, or their representatives where this number is large as in Harrisburg, has so far been entirely successful. It has carried over to the body at large the idea of guidance as something that concerns all, and has made easier the inauguration of guidance programs in the various schools.

The use of guidance projects as a first device to bring into play the active participation of individual teachers has not been quite uniformly successful. In a few cases this work was looked upon by teachers as just one duty too much. In other schools where the principals and the project chairmen showed the same enthusiasm for the guidance program as they accorded activities originating in their schools, the teachers entered into the project work with commendable enthusiasm.

3. *The Program Should be Within Reach of the Average Community*

Apparently some form of guidance program will be within reach of any school district, even though it be carried on by some such modified plan as that suggested previously as Stage I. The smaller the school district, the more must principals and teachers assume the role of counsellors, and the more must reliance be placed on guidance material prepared by others under more favorable conditions of organization. Trials now being organized in rural districts will show to what degree this modification must be carried.

Summarizing our experience so far with respect to teachers and administrators, the following points may be noted:

(1) A school program providing guidance projects or some guidance effort on the part of every teacher is a good approach in arousing teacher interest, especially in a school with fine morale, and a principal who sees the guidance emphasis in its true light.

(2) The immediate organization of a school bureau with a guidance conference program for faculty meetings, preceding the development of projects, is a better approach, given a school with heavy teaching load or uncertain conditions in morale. It may be a better approach under any conditions.

(3) School spirit can be aroused in a district-wide guidance program by having the same or similar work assigned to several schools and handled more or less on a competitive basis or by having each school develop its program along individual lines, with only such things in common with other schools as are especially desirable, for example, bureau forms, occupational information, and community surveys.

(4) School guidance committees in nearly every case showed enthusiasm and willingness to co-operate in the development of the program. Judging by experience so far, there seems to be in each

school at least a few of the teachers who have always had the guidance point of view. With the leadership of this group, extending as it does into various departments of school work, supplemented with professional reading and conference programs in guidance, there is every reason to believe that almost any school can start with a guidance committee, and gradually develop the guidance point of view throughout the teaching staff.

(5) In selecting the chairmen and general chairman of school guidance committees, it is important that little or no other school activities out of classroom should be assigned. In two schools where trials were undertaken the chairmen appointed had other projects under way and could not give the time and attention needed for the guidance program.

E. The Development of Guidance Material

1. *Material of February 16, 1922, on Suggestive Organization*

This material was developed after a series of conferences with guidance specialists of the state, and prepared for use in the organization of tryouts. This included the following:

a. *Essentials*
   (1) Guidance.
   (2) Organization.
   (3) Teacher participation.
   (4) Participation of school administrators and special departments.
   (5) Co-operation with home and community.
   (6) Adaptation to meet varying needs.

b. *Suggested Organization for a City School System*
   (1) A central guidance committee.
   (2) The school unit:
      Counsellors and school guidance committee.
      Subject instructors.
      Teacher advisers.
      The principal.
      The school office.
      The attendance officer, visiting nurse and medical inspector.

- (3) A general school council.
- (4) A preliminary inquiry.
- (5) A central placement bureau.
- (6) Articulation with the general educational program.
- (7) Lines of initiative.
- (8) As part of a community guidance federation or council.

c. *Adaptations to Meet the Needs of Smaller Communities.*
- (1) Districts with several school units.
- (2) Rural and other communities with one and two school units.

d. *Diagrams*
- (1) Plan of organization.
- (2) Articulation with general education.

This material was also sent to guidance specialists outside of the state for their criticism in the development of the program.

2. *The Harrisburg Reports*

Each phase of the Harrisburg development was recorded in detail for the use of other centers. This material included organization and other reports of the Central Committee and School Council, and sub-committee reports of the latter on various phases of guidance. These reports were prepared under the supervision of the Department Committee on Guidance, and include the following:

a. Report of central committee on guidance activities.

b. Organization reports of the general school council.

c. Sub-committee reports:
  - Curriculum guidance.
  - Personal analysis, tests and measurements.
  - Avocational, moral, and social guidance.
  - Vocational guidance.
  - Community co-operation.
  - School bureau organization, records and reports.

d. Project election, approval, organization and forwarding sheets.

3. *The High-School Manual of the State Department of Public Instruction*

Chapter VII in this bulletin published in 1922, presents guidance under the following topics:

a. A changing educational problem.
b. A definition of guidance.
c. The pupils' need of guidance.
d. Curriculum guidance.
e. Vocational guidance.
f. Other guidance activities.
g. Guidance agencies in the school.
h. Guidance through organization.
i. The chairman of the guidance committee.
j. Placement.
k. Guidance in the small school.
l. Outline for suggested organization of guidance in a high school.

4. *The General Guidance Bulletin*

The material for the completed bulletin includes the following:

a. The Problem of Guidance.
b. The Program of Guidance.
c. Material on Guidance.
d. Teacher Training in Guidance (Part IV).
e. Appendix.

Part IVB, published in mimeographed form pending the printing of the general bulletin, is entitled ''Professional Reading and Conference Program in Guidance for Teachers.''

F. A Teacher Training Program

1. *Teacher Training Institutions*

Thirty-five normal and collegiate institutions have appointed representatives to co-operate with the Department in developing the teacher training phase of the program. Of these, fourteen are normal schools and twenty-one are colleges and universities. Nearly all of these offer extension courses in local centers throughout the state during the school year as well as summer courses and are including the general course in guidance as rapidly as conditions permit.

2. *The General Course in Guidance*

This is an introductory course for all teachers, prepared by the Department Committee on Guidance, and comprises the following topics:

a. The course in guidance outlined.
b. The place of guidance in education.
c. Activities in the field of guidance.
d. Earlier aspects of vocational guidance.
e. The beginning of the child labor and social service movements.
f. The guidance movement since 1908.
g. The field of personal analysis.
h. School performance as a guide to personal analysis.
i. Intelligence tests.
j. Pupil self-analysis, the home visit, and the conference as agencies in pupil analysis.
k. The field of occupations.
l. The organization of some important occupations.
m. The occupation from the view-point of the worker.
n. Placement and follow-up.
o. The course in occupations.
p. Avocational and recreational guidance.
q. Guidance in health.
r. Moral and social guidance.
s. The home visit and other social service.
t. The appreciation of art, literature, music, and the drama.
u. The field of curriculum guidance.
v. Selecting courses of study.
w. Methods employed in curriculum guidance.
x. Essentials in a community guidance program.
y. Counselling the boy and girl.
z. Guidance through subject instruction.
aa. The social studies as vehicles for guidance through subject instruction.
ab. Guidance through English.

ac. Guidance through other subject instruction.
ad. Guidance as a teacher service and as a profession.

In February, 1923, each co-operating representative was supplied with a manuscript copy of this suggestive course in guidance, and copies of the Harrisburg trial material. This course already is being given in a number of these institutions, with the understanding that any changes or adaptations are to be made that will prove helpful to students. With an interchange of ideas and material among these institutions, this preliminary work should increase in usefulness. This course, or one corresponding to it, is required in each of the fourteen normal schools for all students preparing for junior-high-school teaching.

3. *Graduate Courses*

Courses in social case work, occupational placement and 'follow-up,' psychological examination, and the curriculum are being offered in a number of the collegiate institutions. These courses applied specifically to counselling will be featured for experienced teachers desiring to specialize in the guidance field, as the demand for such service increases.

4. *Professional Reading and Conference Program in Guidance for Teachers*

Material under this heading has been prepared as Part IVB of the General Bulletin. It is intended to serve a series of nine conferences, one a month during the school year, under the leadership of the guidance committee of the school and the school district. A suggestive program for the conference is outlined as follows:

a. The Conference Program

Time, One hour (the time indicated is not arbitrary, and is given merely to suggest a possible apportionment)

(1) Introductory remarks, Conference leader—3 minutes
    (a) Meeting called to order
    (b) Presentation of the topic
    (c) Introduction of speaker
(2) The speaker—15 minutes
    (a) Presentation of one or more cases in his or her experience, appropriate to topic

    - (b) Analysis of case—personal characteristics, environment, etc.
    - (c) What was done
    - (d) How similar cases in the school might be cared for through the service aimed at in the present guidance program
  - (3) General discussion of case or cases introduced and points made by speaker—conference leader presiding with the speaker answering questions
    Time limit not important, if cases presented by speaker cover topic—10 minutes moderate estimate
  - (4) General discussion—cases, questions, and opinions presented by teachers—25 minutes
    Discussion held to topic by leader
  - (5) Summary, by leader—7 minutes
  - (6) Meeting adjourned

  The material prepared for the reading of teachers, preliminary to these conferences, is presented under the following:

- *b. Topics for Discussion*
  - (1) The field of guidance
  - (2) The guidance movement
  - (3) Curriculum guidance
  - (4) Personal analysis, tests and measurements
  - (5) Occupations
  - (6) Recreational, moral, and social guidance
  - (7) Guidance in the appreciation of art, literature, music, and drama
  - (8) Guidance through subject instruction
  - (9) Community co-operation

5. *Institute Programs*

The field of guidance offers very profitable topics for general sessions and department conferences in city and county institutes. A suggestive outline for such addresses and conferences has been prepared under the following headings:

- *a. Addresses for general sessions*
  - (1) The guidance of our youth
  - (2) Some fundamental concepts in guidance

- (3) Pennsylvania's guidance program
- (4) Pupil analysis from the point of view of the counselor
- (5) The school and the community
- (6) Launching the pupil
- (7) The field of occupations

b. Addresses and discussions for sectional meetings

- (1) The teacher and the pupil
- (2) Some helpful guidance devices
- (3) Guidance through subject instruction

(These are applied to the problems of the major groups: elementary, junior high, senior high, etc., and to subject groups—English, industrial arts, etc.)

G. Objectives for the Year 1923-24

The following have been set by the Committee and approved by the Superintendent of Public Instruction of the Commonwealth.

1. *Publication* and distribution of General Bulletin on Guidance
2. *Advisory service* to trials in Harrisburg, Hazleton, Franklin, and Mt. Union, and to other communities so far as time allows
3. *Trials in rural communities*

   Several typical rural communities selected for this purpose. The following are in this list:

   a. The consolidated district
   b. The rural vocational school and articulating units
   c. The township district having several community schools under a township superintendent
   d. The small one- and two-school district

(The procedure here is to be exceedingly simple. The indexed cumulative envelope record, perhaps even more simple than at present, will form one of the bases for counseling. If there is more than one school in the district, there will be co-operation among teachers of these various school units in a simplified school council on guidance.)

4. *Development of the Teacher Training Phase*

The teacher conference program (IV B) has been used in university and normal school classes in the summer session of 1923, and will have further tryout in school conferences during the present year.

Courses in guidance will continue to be given in residence and extension, with eighteen or more institutions undertaking this work.

The guidance institute aspect of the program is now under way, with a guidance institute staff comprising leaders in this field. The articulating committees on guidance appointed by the Departments of County and District Superintendence of the State Education Association are assisting materially in the development of this phase of the program.

IV. ADMINISTRATIVE ORGANIZATION

A. The Articulation of Guidance in the Pennsylvania Department of Public Instruction

1. *Guidance Concerns All Bureaus, Subject Directors, and Specialists of the Department*

The socialization of the curriculum emphasizes the guidance point of view and little is needed to show its place in a guidance program. With the obvious advantage of having each representative of the Department of Public Instruction stressing the guidance values in his special field, each member has a place in the Department of Public Instruction phase of the state program.

2. *There are Three Stages in the Department Phase*

a. A general conference of all bureau heads, subject directors, and specialists, to mark the need for a guidance program and to provide for a working committee. This meeting was held May 15, 1921.

b. Individual conferences of chairmen and members of the guidance committee with bureau heads, subject directors, and specialists, in order to develop the right point of view, a workable program, and a necessary co-operation. Many such conferences have been held.

c. The development of concrete guidance material suited to the special fields of bureau heads, subject directors, and specialists, for use in their institute addresses, and conferences throughout the state.

This development has been approved by the Superintendent, and if possible will be begun during the present year.

With the emphasis of the Department so largely on the social aspects of education, it is obvious that this material will be prepared *with* members of the Department staff, rather than for them.

The material, if successfully developed, probably will take some such form as that followed in the teacher conference material section IVB, previously referred to, and about as follows:

(1) *Cases and incidents* having special appeal to the various types of audiences, and pertinent to the field of the speaker.

(2) *Brief analysis of the guidance needs* involved in these incidents, and demonstration of the manner in which these needs can be served.

(3) *References and possibly exhibits* of material prepared for teachers and administrators, that can be applied in local situations.

B. Organization for Guidance in a State Department of Public Instruction

The Pennsylvania Guidance Program is still in a preliminary stage, and it is too early to say just what form should be recommended for state organization and administration.

There is, however, one fundamental that might well be observed. The various divisions of a state department of public instruction are just as vitally concerned with guidance as are the various departments of a city school system, and a state department committee on guidance offers as helpful an articulation as does the committee organization in a school district.

V. In Conclusion

The value of the guidance program is not to be measured in terms of committees and organization. Therefore we have but incomplete measure for our plan in Pennsylvania. We believe the plan fundamental, however, and that it provides for the participation of the many who are vitally concerned. With committees and organization in the background, we are awaiting the more significant returns from classroom, home, and community.

CHAPTER III

GUIDANCE PROGRAMS IN LARGE CITY SYSTEMS

A. INTRODUCTORY

L. A. Herr
The Lincoln School of Teachers College, New York City

As the following reports indicate, growing numbers of educators have recently come to realize that the curriculum should include more than formal and academic subject matter. While the schools must continue to impart certain so-called fundamental skills and information to every pupil, their obligation does not end there. They must anticipate the time when the pupil shall have completed his schooling and taken his place in the work-a-day world. They must strive to see that this place is such that the pupil may contribute his best to the world and, by so doing, secure for himself the greatest happiness. This desired result can not be left to chance. It can come about only by causing the pupil to consider his own capabilities or capacities and various opportunities for developing them. The school, therefore, must consciously and definitely make provision in its curriculum for accomplishing this result.

An adequate program for educational and vocational guidance should include deliberate and intelligent choices both of educational opportunities and of occupational adjustments.

Although all teachers are certain to realize the need for providing occupational guidance and educational guidance during the intermediate school, continuation school, high school, and later school periods, and though they may do much of both, nevertheless the experienced counsellors or teachers will realize their limitations in this uncertain field, where many difficulties are possible as the result of misinformation and of misdirection. Consequently, a number of perplexing problems confront all school representatives who are charged with the varying responsibilities for assisting pupils in wisely choosing educational and vocational advantages and for imparting reliable information on the relative opportunities and requirements in important occupations.

As many serious mistakes may result from misinformation and misdirection, all school counsellors and teachers concerned should be challenged to overcome those practices which force unreliable information and unwarranted decisions upon growing boys and girls during any stage of their educational development.

All of this suggests that the ultimate success of the school counselling program in any city will depend, not alone upon the training and experience of those directly in charge, but likewise upon the provision which has been made for securing, evaluating, preparing, and using reliable information resulting from studies of the different occupations.

The following portions of this chapter will show guidance programs which are in force in some of the larger cities of the country, viz., Atlanta, Boston, Chicago, Detroit, New York City, and Pittsburgh.

B. GUIDANCE IN THE ATLANTA SCHOOLS

H. H. Bixler
Director of Vocational Guidance, Atlanta, Georgia

Atlanta was one of the first cities in the United States to organize a vocational guidance department in its public school system. In 1917, the first Director of Vocational Guidance and Educational Research was appointed. The policy of the department is to stress the vocational guidance work in the schools; the director is assisted by vocational counsellors and committees in the high schools and by teachers and committees in the elementary schools. No effort has been made to build an elaborate central office organization or vocational bureau, such as exists in Cincinnati and other cities.

Elementary Schools

One of the features of the work in Atlanta is the stress which is put upon guidance in the elementary schools. Since it is generally true that over half of our pupils drop out before they finish the seventh grade,[1] it is most important that vocational guidance be included in the elementary-school program. Of course, we do not advocate that elementary-school pupils be urged to choose a vocation, but we do believe that they should be acquainted in some definite way with the occupational world and its problems. Even the fourth-grade pupils as a whole or in committees may take excursions to places of civic and vocational interest. At present such trips in this grade, as in the upper grades, are planned by the teachers individually, and no uniform plan is followed. It is planned to have these trips organized on a systematic basis, beginning with September, 1923. Each grade will take four trips a year. Two of these will be of moral and inspirational value, visiting such places as the Uncle Remus Home, the Henry W. Grady monument, etc. The other two trips will be vocational, *i. e.*, visits to farms, industries, offices, and schools.

Vocational Guidance may most effectively be introduced into the curriculum of the elementary school through correlation with English, history, civics, and geography. Except in the seventh grade, it has not been deemed desirable to set aside a special period for it. In order to focus the attention of the children on vocational guidance, and at the same time supply the teacher with material, a printed bulletin or advertisement is supplied each week to every teacher. Credit should be given to Dr. R. D. Allen, of Providence, Rhode Island, for originating the idea. In that city, however, the advertisements are limited to the seventh and eighth grades and stress chiefly the value of high-school education. In Atlanta, however, they are being used in the fifth, sixth, and seventh grades and in the high schools. At present the same bulletins are used in all grades, but in the near future, the high-school series will be different from that used in the elementary school. New bulletins are being printed from time to time by the printing department of the Technological High School so as to avoid repetition from year to year. Some of the bulletins advertise the value of high school; others urge the importance of a definite life plan, the danger in blind-alley jobs, etc. The following are typical:

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[1] Ayres, L. P. *Laggards in Our Schools.* Russell Sage Foundation.

> ''Many young people cannot tell *where* their real strength lies. *High School* and *College* develop these hidden abilities. Stay in school.''
>
> ''Choosing a *life work* is a serious business. The influence which it has on your getting a living is small compared with what it has on building *manhood* and *womanhood.*''

A committee of students assists the school counsellor in posting these bulletins on the bulletin boards in the several classrooms. A space is reserved for this purpose, and a new bulletin is posted every Monday morning.

Standardized tests, both of intelligence and achievement, are being used extensively in the Atlanta schools. Pupils' scores in tests are being used by the seventh-grade teachers as a guide in helping pupils to select high-school courses. No arbitrary rules or occupational intelligence levels have been set up. The intelligence and achievement ages and quotients constitute only one element in the final advice of the teacher-counsellor.

The first definite emphasis on vocational guidance occurs in the fifth grade. The following excerpts from the course of study indicate the correlation possibilities of different subjects: "The history of this grade is almost wholly biographical in treatment. Stress the vocations of the various men studied, comparing their vocations, preparation, etc., with vocations of to-day." "In geography, when studying food, clothing, and shelter, discuss the vocations of the men who produce and manufacture the various articles." "The arithmetic course provides practical problems based on the industrial life of Atlanta and Georgia. In working these practical problems, it is only logical to discuss the vocations and duties of the men and women who face such problems in their daily life." Special vocational guidance projects have also proved stimulating.

Last year, in one fifth grade the class was divided into groups representing technical occupations, mechanical trades, medical occupations, etc. Each group prepared a chart and illustrated their vocations by drawings, cut-out pictures, and objects sewed to the cardboard. Oral and written compositions supplemented the charts.

In the sixth grade, in addition to the bulletins and project methods described above, subject correlations are important. In English, nine theme topics are suggested on the general subject of "Vocational Problems." Debates and dramatizations add interest. In the topical study of history, the vocational point of view can be easily incorporated. In the "Evolution of the Boat," for example, we can trace from the primitive man who had to perform the whole task himself down to the modern shipbuilder who employs an army of specialists.

In geography such questions are considered as: "What are the occupations and standards of living in different European countries? Of the immigrants who come to us? How do these facts affect the choice of vocations made by boys and girls in the United States?" Arithmetic correlates mensuration with problems of the carpenter and work-shop, problems of buying and selling with the commercial life of the city, etc.

In the seventh grade correlations continue along the lines indicated above. Two new features are introduced in this grade. There is a series of guidance lessons, one each week. About a half hour's time is assigned to each lesson. The course is divided into three parts: (1) introductory lessons to show the necessity of work and guidance; (2) the industries of Atlanta; and (3) education in Atlanta (a study of the high-school courses and certain type occupations to which they may lead). The other new feature is the Vocational Guidance Information Card. On the front of the card, each pupil indicates the subjects he likes best in school, his father's vocation, his own tentative choice of vocation, and other pertinent personal facts. A series of pairs of ''work interests'' enables him further to analyze his interests and to indicate the type of work which he likes. The back of the card serves as a cumulative record of the teachers' estimates and recommendations for the student. The teacher records her ratings on such qualities as industry, initiative, leadership, etc., as well as the type of vocation recommended and other comments in the light of pupil's ambitions. The seventh-grade teacher also records the pupil's record in the group intelligence tests. When the pupil is promoted to the high school, the cards are sent to the high-school vocational counsellor, who keeps them on file. Near the end of each semester, they are distributed to the teachers for additional ratings. Hence, when a pupil comes to the counsellor for assistance, there is available a composite picture of the student as seen both by elementary-school and high-school teachers. Guidance, therefore, is based on specific information from teachers who have met the pupil in the classroom. When the pupil graduates or leaves school, the card is transferred to the school employment office. Business men are enthusiastic about the value of this cumulative record in helping to select employees. They say that it enables them to pick the person who will make good ''promotion material.''

The climax of the elementary-school program in vocational guidance is the ''Go-to-High-School Campaign.'' This is carried on in a general way through the whole seventh grade, by means of bulletins, talks, etc. Last year it culminated in an intensive campaign during the month of May. The following plans featured the campaign:

(1) Interviews by the teachers and frequently by the principal and director of vocational guidance with pupils who said they were not going to the high school.

(2) Open-house day at all the high schools.

(3) Frequent five-minute talks by teachers and principals.

(4) Fifteen-minute talks by the director of vocational guidance.

(5) Special program by the parent-teacher associations. High-school principal and teachers were invited to speak. The seventh-grade pupils were honor guests.

(6) On high-school final examination day, pupils who were exempt from examination were sent to the elementary school from which they had graduated for a short talk.

(7) Each high school sent posters to every elementary school.

(8) High-school papers and magazines were mailed to all seventh-grade pupils.

(9) Street car advertising—an entire issue of ''Two Bells,'' the little house organ of the Street Railway Company; also advertising cards.

(10) Co-operation of Board of Lady Visitors, and many other civic organizations.

(11) Personal letters from members of the Rotary, Kiwanis, and other civic clubs to all seventh-grade pupils.

(12) Seventh-grade graduation exercises, urging ''Go to High School.'' Diplomas were granted, stating that the pupil was ''promoted to the high school.''

The value of this campaign may be indicated by the fact that 94.5 percent of the white children and 92 percent of the negroes entered the high school in September, 1923, an increase of about twenty percent over previous years.

High Schools

One of the most important phases of vocational guidance is educational guidance. This includes not only the assisting of pupils in the choice of courses, but also the more fundamental problem of classification and adaptation of the curriculum to the needs of the individual pupil. The class entering the high schools in Atlanta is divided into three groups according to I.Q. as found in the group tests in the elementary school. Not only do individual teachers adapt the teaching to the intelligence level of the class, but progress is being made in re-organizing the courses of study. The English department has already done splendid work in outlining the 'minimal essentials' for the group of less ability.

When vocational guidance work in the high schools was first organized, it was carried on by committees of teachers. Beginning with the current year, the chairmen of these committees are designated as vocational counsellors. In two of the four high schools provision has been made to relieve these counsellors of a portion of their teaching duties. Each counsellor is in charge of the vocational guidance cards for the school and supervises the distribution of the cards to the teachers for their ratings. Since the failure problem is one of the most pressing problems in Atlanta, the counsellors are devoting much time to personal interviews with pupils, at the teachers' requests. Their other duties are of the same nature as in other cities.

For several years vocational civics has formed a part of the civics course in the first year of the high school. Nine weeks is at present devoted to these vocational information classes. With the organization of junior high schools next year, this course will be expanded into a semester course, given probably in the eighth grade. Movies, slides, and trips to industries are some of the features of this class.

There is always danger that the vocational guidance activities of a high school be confined to a very small group of failures, 'drop-outs,' or other pupils who voluntarily seek help. In order to secure the attention and interest of the entire student body and lead them to think intelligently about their life work, a number of publicity methods have been utilized. One of the most effective of these has been the vocational guidance bulletins described above in connection with the elementary schools. The proctor, student lieutenant or teacher reads the bulletin as it is posted each week. Posters and charts are also found to be stimulating. During vocational guidance week, elaborate displays are arranged for the main bulletin boards in the corridors. Some of these posters emphasize the importance of a definite aim in life, the danger of drifting, etc. Others illustrate specific vocations, vividly depicting the duties, opportunities, preparation required, and the remuneration in a number of vocations in which students are most interested. Books and pamphlets from the library supply the necessary data, and form a portion of the exhibit.

Last year a poster contest for cash prizes proved very effective in securing material for vocational guidance week and for the ''go-to-high-school'' campaign. Another avenue of publicity is the school paper. Short articles appear from time to time. An entire issue of one school's weekly magazine was devoted to a ''Vocational Guidance Number.'' Another 'drive' aimed particularly at the senior classes is the ''Vocational Opportunity'' campaign. Prominent citizens who are recognized leaders in their respective vocations discuss them in short talks.

The placement function of the vocational guidance department is centralized in the School Employment Office, maintained jointly by the public schools and the Junior Division, U. S. Employment Service. This office is rendering valuable service, not only in finding positions for young people between the ages of 14 and 21, but also in collecting occupational information for use in the schools.

But vocational guidance in Atlanta is not confined to the youthful student. The Atlanta Opportunity School, which registers almost one thousand employed persons in part-time continuation, trade, and business courses, offers both guidance and training to workers, young and old alike. The principal endeavors personally to interview and to advise all applicants for instruction. Another teacher is in charge of the life career class, and assists in placing any students who request assistance.

There are many weak links in the chain of vocational guidance in Atlanta, but all—superintendent, principals, and teachers—are co-operating in such a friendly spirit that each year brings advancement.

NOTE: In September, 1923, since the foregoing account was prepared, the Atlanta Schools were re-organized on the K-6-3-3 plan. Numerous changes occurred with the opening of four new junior high schools. The following salient facts should be noted:

1. Sixty minutes per week has been allotted to guidance activities in the sixth grade.
2. Two counsellors have been appointed in each junior high school—a man for the boys and a woman for the girls. The principal and assistant principal also devote much time to the guidance program.

3. 'Try-out,' or exploratory, courses are being offered in the seventh and eighth grades, or first two years of the junior high school.

4. A course in vocational civics, five periods a week for one quarter, is being offered to the pupils in the seventh grade.

5. The classification of pupils in the junior high school has been perfected through the use of the teachers' estimates in addition to I. Q.'s. Reclassification, if necessary, occurs at the end of the first quarter. A policy of enrichment, rather than acceleration, is in force for the bright classes.

6. A "Counsellor's Interview Card" has been devised to be filled out by any teacher who wishes to send a pupil for interview by the counsellor.

7. Seventeen special classes for subnormal children are in operation in the elementary schools.

C. GUIDANCE IN BOSTON

Susan B. Ginn
Director of Vocational Guidance, Placement Bureau, Boston, Massachusetts

The work of educational and vocational guidance in Boston can best be described by reference to the accompanying chart.

Organization and Functions of the Department

The term, ''vocational counsellor,'' as used by this department, refers to the teachers in the elementary and high schools appointed to do counselling in addition to their regular duties.

The terms ''vocational instructor'' (man) and ''vocational assistant'' (woman) apply to members of the staff of the central office, who devote all their time to the work of the department.

Purpose of the Department

The Department of Vocational Guidance is organized to assist pupils of the Boston schools, both while in school and after leaving, in matters concerning educational and vocational direction.

Work of the Department

The work of the department is carried on along three lines: Guidance, Placement, and Follow-Up.

Guidance

Guidance is interpreted to include both educational and vocational guidance.

1. The department has prepared ''A Guide to the Choice of a Secondary School'' for use in the seventh, eighth, and ninth grades, to direct the attention of pupils to the courses open to them in the high schools of the city, and to urge them and their parents to consider which course will best prepare the children for the higher institution of their selection or for their chosen work.

2. A copy of a bibliography covering the vocations mentioned in the above bulletin has been sent to each vocational counsellor. By an arrangement with the Boston Public Library, copies of the books

listed in this bibliography are available in the central library and in the branch libraries throughout the city.

3. At intervals the department sends to the counsellors pamphlet material giving information regarding labor laws, health, and occupations and industries. In this distribution the department has the co-operation of state departments, banks, the Chamber of Commerce, and large industrial and manufacturing organizations.

4. For the use of high-school pupils and others the department keeps an up-to-date file of more than 200 school and college catalogues. Each year it makes an evening-school drive among the young people who are working. To aid in this, a study has been made of evening-school opportunities in Boston, and a reference list, classified by subjects, has been prepared.

5. For the children in elementary schools the study of occupations is developed in connection with the classes in English, geography, community civics, etc. Classes in occupations are also conducted in schools in certain sections of the city where many children leave school to go to work on becoming fourteen years of age. Visits to industries are undertaken.

Placement

Placement is of four general types (see chart). The department aims to bring together the right work and the right workers. It bases its placements on a knowledge of the child.[1]

The department keeps in touch with employers by telephone, by mail, and by visits by members of the staff to industries and business houses. Vacancies indicated in firms unknown to the department are investigated before placement is made. A record of all registrants of the department known to be working for a firm, whether placed by the department or not, is kept on the work record.

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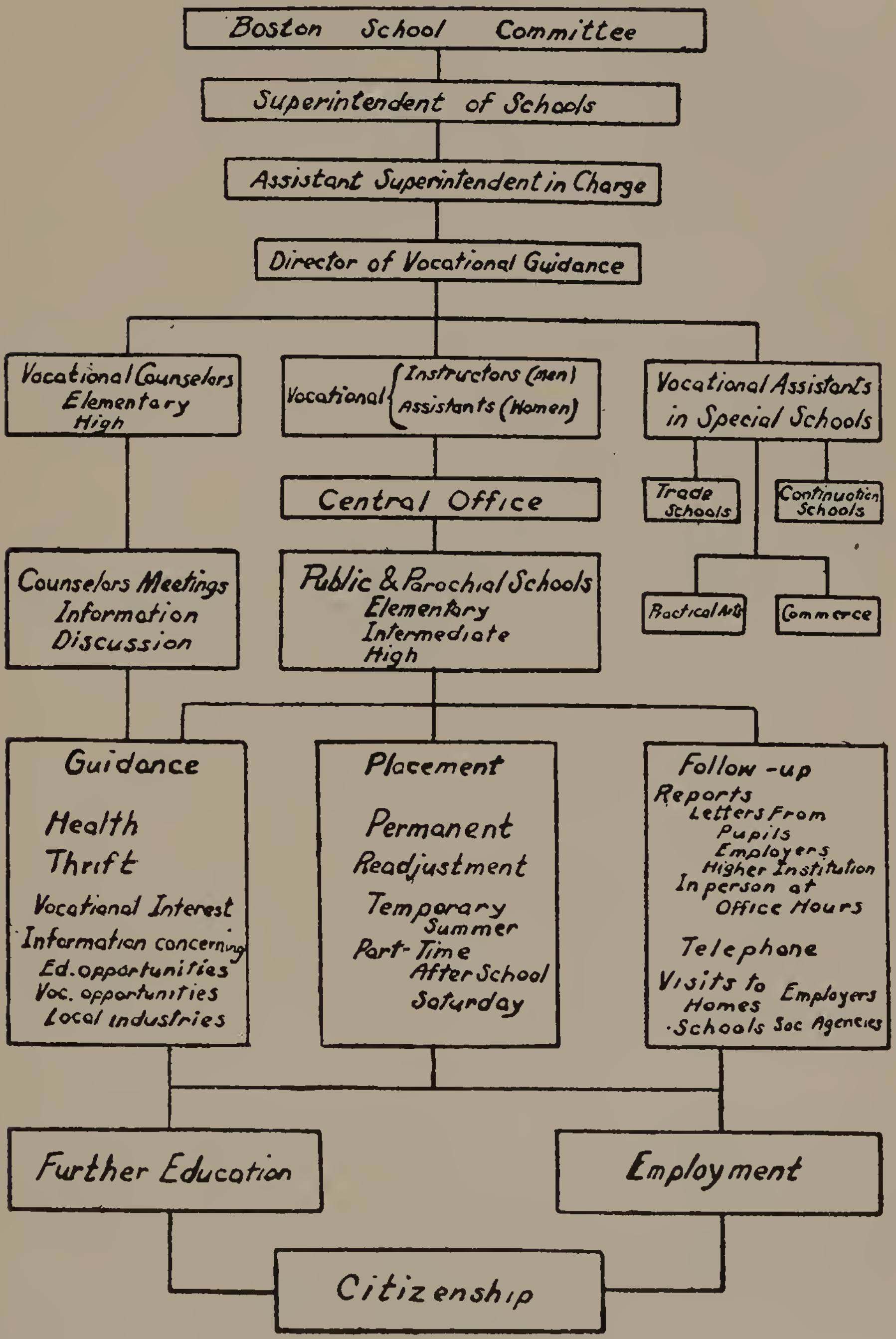
[1] The well-developed forms used in connection with the placement, follow-up, registration, and statistics work will be suggestive and valuable to any one interested in guidance work. These forms may be secured by writing to the office of the Director of Vocational Guidance, Boston Placement Bureau, 15 Beacon Street, Boston, Massachusetts.

Department of Vocational Guidance Organization and Functions



Follow-Up

1. Members of the staff, by visits to firms employing young persons, or by letters and cards of inquiry or by telephone, ascertain the kind of work done by employees placed through the department. Through calls at the office during the evening office hours, or on noon hours, reports are obtained from the young persons. Thus the department acts as a clearing house for both parties and is often able to adjust difficulties that otherwise might lead to discharge or to leaving work.

2. From six to nine months after graduation the department gets in touch with each graduate of the general high schools registered, and makes a report to the head master of each school.

3. Registration of high-school seniors is carried on automatically in the spring of each year. Elementary-school graduates and 'drop-outs' and high-school undergraduates who apply at the central office for assistance are required to bring the personal record filled out by their teacher. The facts on this temporary record are transferred to the permanent card. All these records are filed in the central office. On the continuation card a chronological record is kept of all contacts with young persons up to the age of twenty-one years.

4. These registration cards serve also as a basis for several kinds of research studies. The information they contain provides an opportunity for the department to compare training in school with the actual needs in the commercial and industrial world. For example, the statistics on the graduates of general high schools in 1922 show that of the 1916 graduates (776 boys and 1140 girls), 630 (307 boys and 323 girls) are attending higher institutions of learning full time. Included in this group are 30 colleges, 5 public and 7 private normal schools, 7 art and music schools, 3 nurses training schools, 1 public and 11 private business schools, 5 trade and vocational schools, 11 other private schools, 11 post-graduate courses in public high schools, 5 schools not classified. Of the graduates 1058 (363 boys and 695 girls) are at work; of this number, 214 (128 boys and 86 girls) are taking evening courses.

Methods of Acquainting Pupils With Educational Opportunities

Within the School System

1. Bulletin No. 2, 1922, entitled "A Guide to the Choice of a Secondary School," prepared for 7th- and 8th-grade pupils to aid in the selection of the high-school or trade-school course most likely to be of advantage in preparing for a stated vocation, also presents information regarding evening schools and the continuation school. (Prepared by the Department of Vocational Guidance.)

2. Bulletin No. 2 is supplemented by a bibliography for the use of pupils and teachers, covering the occupations and professions mentioned in this document.

3. Counsellors in the elementary and high schools advise and assist pupils in the choice of high schools and colleges. In many high schools the teachers act as special advisers for the particular colleges of which they are graduates.

4. Visits to secondary schools and industries are made by groups of elementary pupils accompanied by counsellor or teacher. The purpose is to help the pupil choose a vocation and the best method of preparation for it.

5. High-school principals or their representatives visit elementary schools from which they draw pupils and address members of the graduating classes.

6. Deans and other representatives of colleges and special schools address high-school senior classes in reference to the opportunities in the particular colleges or schools which they represent.

7. Members of the staff of the vocational guidance department address senior and other high-school classes in reference to the purposes of this department, which includes educational as well as vocational guidance.

8. The Vocational Guidance Department keeps an up-to-date file of over 200 school and college catalogues for use of counsellors, pupils, and graduates.

9. The Vocational Guidance Department makes a special drive each fall to interest high-school graduates and 'drop-outs,' who are working or wanting work, in evening-school opportunities in Boston.

10. A classified list has been prepared showing all evening schools, public or private, giving instruction in any subject. At present, the list consists of 66 different institutions for boys and 88 different institutions for girls. All subjects taught are classified under the headings Trade Courses, Preparatory Courses, Professional Courses, Business Courses, History, Science and Language Courses, etc., with numbers referring to an alphabetical key of the schools, thus making it easy to ascertain every school in the city giving instruction in any desired subject.

Outside the School System

1. Co-operation with the Chamber of Commerce.
2. Talks to parent-teacher associations and church organizations by members of the staff. The director is on the speakers' list of the Massachusetts Parent-Teachers Association and National Civic Federation, and has many more calls both inside and outside of Boston than she can possibly fill.
3. Newspaper and magazine articles.

D. GUIDANCE IN CHICAGO

Anne S. Davis
Director Vocational Guidance, Department of Public Schools,
Chicago, Illinois

This center for junior employment problems conducts the following activities: (1) certification of fourteen- to sixteen-year-old workers, (2) placement, (3) counselling, (4) industrial study, (5) publicity.

CERTIFICATION

Certification is carried out under the child labor law and involves careful inspection of documents, physical examinations, elaborate co-operation with Compulsory Education and Continuation Schools, and work with numerous social agencies on individual problem cases.

PLACEMENT

Placement is carried as a voluntary function to aid any junior from 14 to 20 years in securing suitable work under approved conditions and with intelligent appreciation of opportunities ahead. Young people of elementary-school attainment only present problems so different from the high-school graduate that the work is divided on this basis. Placement of high-school graduates is carried on with co-operation of high-school advisers.

A special adviser for handicapped children works for the adjustment in school or at work of children physically or mentally handicapped.

COUNSELLING

Counselling is carried on by all members of the vocational staff as they come into contact with children presenting special problems. It is more specifically the duty of district and high-school advisers.

District Advisers

District advisers, members of this staff, work in elementary public schools. They do case work with pupils under sixteen, desirous of leaving school for work, with a view to retaining them in school where work is not financially necessary. This sometimes is accomplished by transfer to another type of school. They cooperate with social agencies in the field. District advisers also meet pupils of upper grades in groups for discussion of problems of educational and vocational opportunities, and work with the high-school advisers to secure high-school enrollment.

High-School Advisers

High-school advisers are teachers appointed by high-school principals to carry out in each high-school a vocational guidance program. The free time allowed to the advisers for this work varies according to the exigencies of the high-school program and the elements in the program which they are able to carry out vary in consequence. The high-school advisers meet each month at the central office for a discussion of projects and problems.

In so far as possible they carry out the following program:

Duties of the High-School Adviser

1. In elementary schools tributary to the given high schools, to put before the eighth-grade pupils information concerning the different courses in the high schools, to assist in a wise choice of school and course.

2. To confer with maladjusted pupils in the high school, especially 1B pupils falling below grade in two or more subjects, at the end of each five-week period.

3. To investigate the cases of pupils who leave during the term, with a view to inducing them to stay if advisable, and to be responsible for the issuance of school records prerequisite to employment certificates for pupils under 16 who must work.

4. To distribute and utilize material prepared by the bureau. (See Publicity.)

5. To present vocational opportunities to pupils by means of lectures, reading matter, a course in occupations, etc.

6. To study systematically the abilities and qualifications of individual students. To interview all pupils above the second year of the four-year course, and every student in the final semester of

the two-year course. To induce the latter in so far as advisable to continue in the four-year course.

7. To carry on placement in co-operation with the central bureau. (This involves the securing and forwarding of records and estimates of pupils' abilities.)

8. To consult with students expecting to enter college as to entrance requirements, cost, and vocational opportunities. To provide for students a source of information along these lines.

Certification, placement, and counselling are end activities which can be carried on intelligently only through full use of the work of industrial study and publicity.

The visiting teacher is the arm of the principal reaching out into the homes. For the one school in which she works, the visiting teacher is vocational adviser, and doing more detailed work than is possible to a district adviser.

Industrial Study

Industrial study is the basis of the preceding fields of work. It aims to prepare, keep up-to-date, and render useful a complete survey of the industrial field as it affects juniors. This is done by visits to places of employment and case records of the same, including testimony of workers, and by the collection of published material on vocations and vocational opportunity. Investigations of establishments are undertaken to solve particular problems arising in certification and placement, as well as in groups for basic industrial information. As information becomes available, it is taken up in staff meetings. (All members of staff participate in securing information.) This division works with the State Factory Inspector to define the processes forbidden to minors as hazardous, and to prevent violations; and with the Industrial Board to secure justice for children suffering industrial accident.

Publicity

Publicity involves the preparation for pupils, advisers, and teachers, of information along the lines of educational and vocational opportunity. The material includes posters, fliers,[1] pamphlets and mimeographed material. The director and an assistant work over the materials collected by the industrial studies division or by groups of advisers and the directors of various branches of the school system. In meeting various groups, such as school principals, business federations, clubs, social workers, etc., the director also advances the work of the bureau.

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[1] In print are:

''Illinois Laws Which Protect Boys and Girls at Work'' (Child Labor and Continuation School Laws).

''After High School?'' (The public school opportunity beyond the high school).

''Information for Prospective College Students.''

''Are You Thinking?'' (Information for 8th-grade graduates on high-school courses).

''A Chance for Every Child'' (Public school opportunities for handicapped children).

''Vocational Guidance News and Periodical Review'' (Issued monthly, September to May).

A Series of 26 Bulletins on Occupations (4 p. folders):

Accounting
Advertising
Architecture
Banking
Business Executive
Chemistry
Civil Service
Contracting
Dentistry
Drafting
Employment Management
Engineering
Farming
Foreign Commercial Service
Household Arts
Industrial Art
Journalism
Medicine
Law
Library Service
Nursing
Pharmacy
Private Secretary
Salesmanship
Social Service
Teaching

E. GUIDANCE IN DETROIT

A. H. Edgerton

Teachers College and The Lincoln School, New York City, formerly Supervisor of Vocational Information and School Counselling, Detroit, Michigan.

During the past three years the Detroit Board of Education has been committed to a policy of providing for continuous counsel with children, not only during their secondary school attendance period, but during the early employment training and adjustment periods as well. Consequently a rather comprehensive organization has been developed for providing systematic counsel and guidance to parallel the intermediate school, continuation school, high school, and specific vocational instruction. As will be explained somewhat in detail, this system attempts to furnish all pupils with reliable information regarding important educational and occupational possibilities.

The various kinds of information pertaining to occupational opportunities and employment requirements have been made available in the form of source-bulletins for the use of counsellors, house principals, teachers, and pupils. As may be noted more fully in Chapter V, this reliable information has resulted from continuous investigations and analyses of the various important industrial, commercial, and professional occupations. In keeping with the stated policy of the board of education, such factual material as is needed for considerations relative to the nature of work, the advantages and disadvantages, the qualifications and training, the possibilities, the remuneration and advancement, and the like is collected first-hand. These data are evaluated and prepared for convenient use in intermediate schools, continuation schools, high schools, and special classes, as a part of the whole program for providing systematic educational and vocational guidance.

Duties of Those Charged With Guidance

These valued facts dealing with relative opportunities and requirements in different occupations are prepared for, and used by, qualified school representatives who are sufficiently free from classroom teaching and disciplinary problems to have the following responsibilities:

(1) *Providing initial interviews and conferences,* especially for classifying pupils and for encouraging those who are entering the school to think more seriously of their educational advantages and occupational possibilities. It is attempted to have all boys and girls interviewed regarding these problems, either individually or in small groups, or both, during the early part of the first year.

(2) *Following-up and helping to adjust pupils* who did not succeed in making tentative plans during their first year or years. Pupils are encouraged to consult with their school counsellors or advisers whenever they have any general or specific questions pertaining to the election of, or preparation for, life occupations.

(3) *Arranging group meetings to hear talks* by those who are especially qualified to speak and to answer questions about their chosen occupations. Conferences often are made optional for pupils who, having made tentative decisions, can benefit by talks from unbiased men and women who have succeeded in their callings.

(4) *Providing occupational studies* in separate classes and by assisting teachers of English, social science, physical science, health education, practical arts, vocational subjects, etc., for imparting related occupational information to show relationships between the subjects of instruction and the occupations which involve them. (This usually results in making courses of study that will respect individual needs and capacities.) These occupational studies, which have become recognized parts of the courses of study in several subjects, include such considerations as importance of work, constancy of demand for employment, working conditions, qualifications and training needed, possible rewards and advancement, etc., in order to help pupils who continue their school work to select programs of training and courses in higher education more wisely, and to help those who find it necessary to leave school with a minimal amount of education to choose and plan their procedure more thoughtfully.

(5) *Co-operating with teachers in keeping cumulative records* of each pupil's performance both inside and outside (where possible) of school. Counsellors and other school representatives are inter-

ested in the results of tests of general intelligence as a basis for general classification, but they also recognize the importance of interpreting these records of a general measure as only one of the many factors resulting from testing pupils' abilities and interests in various ways through school and outside performance.

(6) *Co-operating with the department which issues working permits* to children who are leaving full-time school, but are required by law to attend continuation classes for eight hours a week. It is attempted to interview each applicant at the school before a formal request for this permit is made at the central office of the Attendance Department where it is issued.

(7) *Co-operating with all other school and outside agencies* which interview parents and children, investigate home and working conditions, and in any way pass upon the advisability or necessity for individual children to leave any particular school or to be transferred from one school to another. Every effort is made to solicit the co-operation of parents and others concerned in helping children to select suitable courses of study or training programs in preparation for their occupational interests or chosen plans.

(8) *Co-operating with the placement officers,* co-ordinators, and others that advise, place, and adjust boys and girls who are qualified for part-time work, who desire positions upon leaving schools, or who wish to transfer to other employment. Each pupil who has decided to leave school benefits to some extent by the supervision of his employment contacts and training adjustments, and his employer unquestionably profits either directly or indirectly by this clearing-house for information that is available and needed.

Although the importance of each provision will be evident to those who are confronted with such responsibility, it is obvious that the nature, method, and extent of each one of these necessarily will be determined largely by adaptations to the particular levels of learning in question. In other words, school counselling and guidance should recognize the significant differences which are involved in meeting the needs and respecting the interests of boys and girls in intermediate schools, continuation schools, high schools, and each other stage of educational development.

INTERMEDIATE (JUNIOR HIGH) SCHOOLS

The demands which were primarily responsible for the development of the intermediate-school organization in Detroit imply systematic counsel for each pupil throughout the so-called "self-finding" period in the seventh, eighth, and ninth grades. For this reason, it is arranged for one or more counsellors (see Diagram I) in each school to be sufficiently free from classroom teaching and disciplinary responsibility to interview boys and girls regarding the choice of their life work and the selection of courses in preparation for specific occupations. Not only do these full-time and part-time counsellors consider it their duty to advise pupils during their entire school attendance and training periods, but they also provide appropriate educational and vocational facts for all pupils concerned.

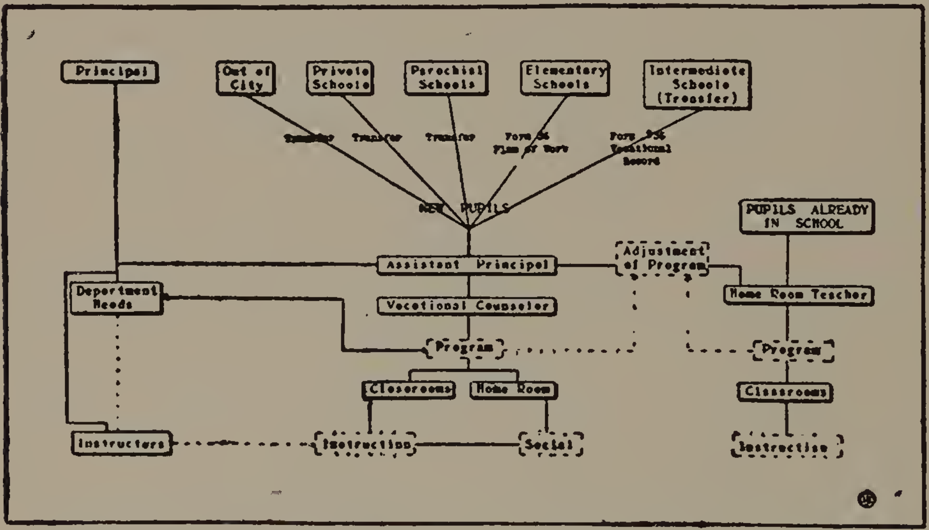

DIAGRAM I.—SHOWING GENERAL ORGANIZATION AND PUPIL ROUTINE IN INTERMEDIATE SCHOOLS

The initial group meetings and interviews which the counsellors and home-room teachers have with the seventh-grade pupils who are entering the junior high schools for the first time, are concerned mainly in encouraging them to think more seriously regarding the problems of their life work. Since it is necessary at the end of this year for each pupil to choose between such courses as general, commercial, technical, household arts, and industrial, all of which have a number of studies in common, it is desirable to impress these children with the importance of understanding the different types of occupational activity that these courses represent. If possible, all of the boys and girls are interviewed either individually or in small groups during the seventh year. At the outset, it sometimes proves more satisfactory for the counsellors to meet pupils in small groups because of the stimulation which comes from having those pupils who feel free to talk to the other members of the group, explain their future plans. In any case, pupils are encouraged to consult with their counsellors whenever they have any questions or plans regarding either the selection of, or the preparation for, their life callings.

As a result of these conferences and interviews during the seventh year, a part of the eighth and ninth years is devoted profitably to the adjustment of those pupils who did not succeed in making at least tentative plans for their life work. In addition to these individual conferences relative to educational and occupational plans, group meetings are arranged to provide suitable talks for those who are beginning to ask questions and to evidence special interest in the opportunities and requirements of certain divisions of the professional, the commercial, the industrial, the household, and even the agricultural vocations. Several of these conferences are made optional for those who have made tentative decisions and can benefit by talks from men and women who have succeeded in their respective callings. Of course, the ninth year emphasizes, even more strongly, the advantages in making intelligent decisions and definite preparations for their chosen careers. Following the general 'try-out' courses and occupational considerations in the seventh year, the eighth- and ninth-grade studies, interviews, conferences, and talks not only become more intensive, but give increasing attention to the presentation of facts in keeping with the particular interests of the pupils. This usually is arranged with little administrative difficulty, since the pupils in these years are already grouped according to the courses which they are pursuing.

Although the vocational counsellors are interested in all tests of general intelligence, they undertake to interpret the results of these tests as only one factor to be considered along with other information resulting from the pupils' performance, both inside and outside of school. All classroom and home-room teachers, who naturally have rather intimate contact with their pupils, give valuable assistance in furthering the vocational and educational guidance program (1) by reporting upon individual pupils, (2) by imparting related occupational information, and (3) by showing the connection between these vocations (occupations and professions) and their respective subjects of instruction.

CONTINUATION SCHOOLS (BOYS' AND GIRLS')

Because the effectiveness of part-time instruction depends to a large extent upon the development of a suitable system of guidance and co-ordination, the counselling for part-time pupils is considered an indispensable part of the programs for both the boys' and girls' continuation schools. It is the duty of the counsellors to provide individual and group conferences for stimulating all pupils enrolled in these schools. The counsellors for these junior workers are responsible for acquainting new pupils with the provisions of the compulsory attendance law with special reference to school attendance, working permits, and junior employment service, as well as for assisting them in making proper vocational choices.

The co-ordinators, with the aid of the counsellors, attempt to connect the activities of the school, the occupation, the home, and the community. The nature of the co-ordinators' positions allows them to assist the school officials and teachers in maintaining instruction which reflects the requirements made upon the junior wage-earners and also to inform the employers of the educational opportunities which are, and can be, provided by the school system with their cooperation.

The counsellors also assign pupils to their school programs, which are determined by current employment and vocational choice; recommend necessary adjustments in pupils' school programs from time to time; suggest desirable adjustments in employment to best serve the interests of individual pupils; impart vocational information to sponsors, teachers, and pupils; and recommend suitable applicants for positions to be filled by the employment division. These counsellors also co-operate with the department responsible for issuing working permits to children who are leaving full-time school, but are required by law to attend continuation classes for eight hours of each week. It likewise is an important part of the counsellors' work to co-operate with this and all other agencies and school representatives who interview parents and children, investigate home and working conditions, and in any way pass upon the necessity for individual children to leave school during the compulsory attendance age.

HIGH SCHOOLS (COMPREHENSIVE AND TECHNICAL)

The different types of high-school organization in Detroit necessitate a somewhat varied practice in school counselling. Diagram II shows the type of organization which is to be found, with slight modification, in a number of the largest high schools in the city. There is little fundamental distinction between the so-called "house principalship" and the grade room organizations. In the former organization, students are assigned alphabetically to "houses" of

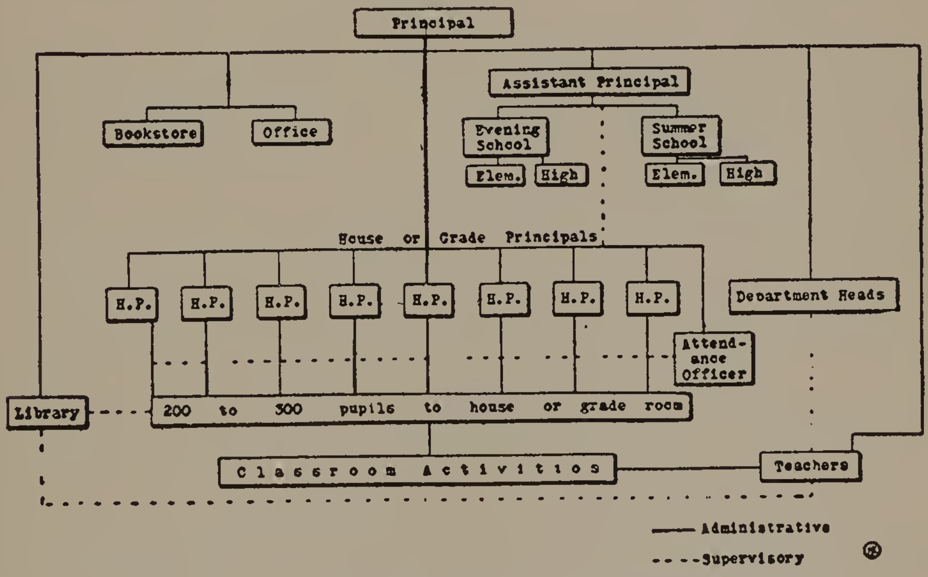

DIAGRAM II.—SHOWING TYPE OF ORGANIZATION IN MOST DETROIT HIGH SCHOOLS from 200 to 300 or more students, and they ordinarily remain in these ''houses'' throughout their entire high-school careers. The pupils are segregated on the basis of sex; boys and girls report to their respective ''houses'' for daily record and study during vacant periods, unless assigned to the library. Each house principal is responsible for the pupils' programs, records, attendance, and for the establishment and maintenance of contact with parents. Since these house principals are responsible for educational and vocational counselling in their respective ''houses,'' it often is found desirable to have all of them in one school act as a committee. The central office is in a position to assist house principals through making available effective clearance facilities for information[1] and through sending to the ''houses'' specialists for individual or group conferences whenever there is need for such supplementary assistance, as is occasionally the case during periods of course adjustment or immediately preceding part-time or full-time employment.

The grade room system represents a slight modification of the above plan in that students are assigned by grades rather than alphabetically and, in addition, there is no sex segregation. Much valued assistance is given to pupils by the regular teachers through the enrichment of their courses by including vital occupational information, all of which supplements that personal service rendered by the grade room teachers. All school counsellors or advisers are held responsible for individual and group conferences, whenever these seem desirable. It is in this connection that the central office finds an opportunity to render an important service through sending specialists who are constantly in touch with the opportunities and requirements in various kinds of employment.

A type of organization which is quite different from either the house principalship or grade room plan is represented by the technical high school. The assignment of two counsellors in this organization makes it possible to adjust students within the various departments of the entire school organization. The introduction of ''group heads,'' who are charged with the responsibility for instructional provision to meet the needs of their respective groups, affords exceptional opportunity for the effective adjustment of students both in the day, and in the evening or senior continuation schools, which operate as a unit organization. The assignment of students for instruction and adjustment takes place through group sponsors. In this connection, perhaps it should be mentioned that the preliminary assignment of students for instruction in any department or group is based upon acceptance of the vocational counsellors' decisions by the group heads or their representatives. The vocational counsellors act as heads of educational and vocational guidance activities for the whole school organization.

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[1] See the report of one type of program in a high school of this kind in Chapter V.

SUMMARY AND CONCLUSION

The great need and opportunity for dealing wisely with the problem of an efficient choice suggests that each pupil's decision should result from careful reasoning. Therefore, this decision might well be based upon an understanding of the pupil's resources and limitations and also upon some knowledge of the economic facts, personal relationships, and relative values involved in selecting a suitable life occupation and preparing properly for it. Whenever these studies and related experiences have been based upon actual facts and have received proper attention, they have not only vitalized the respective courses of study, but have also contributed materially to an intelligent understanding of the different aspects of occupational work.

In Detroit, and likewise in several other cities, it has seemed advantageous to make qualified school representatives directly responsible for (1) providing initial interviews and conferences; (2) following-up and helping to adjust pupils; (3) arranging group or class meetings for studies about occupations; (4) assisting teachers of English, social science, physical science, health education, practical arts, and vocational courses in imparting related information; (5) co-operating with heads of departments and teachers in making courses of study and keeping suitable records; (6) co-operating with attendance teachers and working permit officials; (7) co-operating with placement officers, co-ordinators, and other allied departments and agencies.

The situation of child employment in Detroit is not much different from that confronting such other cities as St. Louis, Cincinnati, Philadelphia, and New York, where about 91 percent of the children who leave school at this period enter unskilled occupations, less than 7 percent enter semi-skilled occupations, and only about 2 percent enter more highly skilled occupations. The urgent need for adequate counsel, training, placement, and follow-up is obvious when we realize that approximately 72 percent of all part-time or continuation-school children necessarily enter positions which are more or less of the so-called 'blind alley' nature, in so far as future possibilities in these particular jobs are concerned.

Finally, there are many evidences of an increasing realization by employers of the desirability for co-operating with the public schools in order to eliminate unnecessary waste in excessive turnover and in other undesirable relationships which are inevitable results of this hit-and-miss system of 'hiring and firing.' In other words, more and more employers have co-operated because they have realized that our mutual problems can be minimized by the systematic guidance, placement, and follow-up work which are being gradually developed for the benefit of all concerned. They likewise appreciate that the public school system is the most effective agency, or clearing-house, from which they may secure desired records of individual performance and conduct as well as other valued information and assistance.

F. GUIDANCE IN NEW YORK CITY

(Vocational Service for Juniors)

MRS. ALICE K. POLLITZER
Director Vocational Service for Juniors, New York City

The Board of Education makes practically no provision for vocational guidance in the public schools of New York City. One vocational high school has a full-time vocational counsellor; several vocational high schools have employment departments; a central employment office is maintained for the remaining high schools. Two continuation schools have teachers especially assigned to employment and vocational guidance work.

The most important vocational guidance work in the city is carried on by the Vocational Service for Juniors, a privately supported organization, conducted through a board of managers with a board of advisers. An outline of the work of this organization follows.

GENERAL PURPOSE

The Vocational Service for Juniors, though privately supported, works almost as an integral part of the public school system, and is directing its efforts toward being taken over by the Department of Education. Its aims are:

1. To assist pupils to make an intelligent choice of their next step in education or, if necessary, of work;

2. To give scholarships to such as would be forced out of school by economic conditions, to enable them to get the education and training that seem likely to develop their highest powers;

3. To place workers under eighteen years of age in investigated positions, chosen as far as possible to meet their needs and ambitions, and to follow them up when placed, by means of evening office hours and visits to employers.

STAFF

In the central administrative office there are employed director, assistant director, psychologist, assistant psychologist, scholarship secretary, counsellor in charge of employment clearance, and clerical workers.

In schools and employment bureaus under the direction of the central administrative office are employed ten counsellors working partly in schools and partly in employment bureaus, and clerical workers.

ACTIVITIES

A. Educational and Vocational Counselling

The methods used in the five elementary schools and in the four junior high schools in which the Vocational Service for Juniors works are indicated by the following outline.

1. *Procedure in Schools*

1. The director calls an early term conference of principal, the teachers concerned, visiting teacher, and nurse, with the counsellor assigned to the school and the staff psychologist to consider: (a) the aims and methods of the Vocational Service for Juniors; (b) the organization of the school, *i. e.*, the variety of courses, possibilities of change, etc. These conferences and consultations are repeated with individual teachers and nurses as occasion demands, by the director, the counsellor or the psychologist.

2. The staff psychologist, with assistant, gives group psychological tests, trade tests wherever indicated, and individual tests, on recommendation of teacher, psychologist, or counsellor, as follows: (a) for the junior high school, in the 7th grade, to decide on the course in the junior high school, and in the 8th grade wherever a student is not making good, as shown by his school record or whenever the teacher is in doubt of the wisdom of his choice; (b) in 8th-grade schools, to Grades VII-B, VIII-A and VIII-B if not already tested; (c) to pupils applying for working papers, and as far as possible to all over-age pupils.

3. Under the direction of the counsellor, pupils in classes fill in questionnaires showing something of the economic and social background of the family and of the aptitudes, interests, and ambitions of the child. The returns are kept by the counsellor.

4. The counsellors give talks on occupations in the 7th, 8th, and 9th grades, based on trade and occupational studies and on actual experience in the employment bureau, and including in simple terms the historical development of present industry, the functions of employers' associations and labor unions, and business and social ethics.

5. The counsellors conduct excursions to high schools, industries, exhibits, etc.

6. Moving pictures showing conditions and processes in industry are shown in connection with occupational talks.

7. The counsellors interview and re-interview pupils of the 7th, 8th, and 9th grades as indicated above, and also applicants for working papers.

8. The counsellor sends the child's record and the report of guidance based upon it to the continuation schools if he be obliged to attend one, and to the employment bureau to serve as a basis for his choice of course or of job.

2. *Procedure With Parents*

1. Conferences are held with parents at the school, by the counsellor.

2. Home visits are made by the counsellor or wherever there is a conflict between the choice of the parent or child and the counsellor's point of view, if the parent fails to confer with the counsellor in school.

3. Literature is distributed from the administrative office in simple form in English, Yiddish, and Italian, stating the value of further education and training and the opportunities offered by different types of schools and courses.

3. *Co-operation With Social Agencies*

Directors and counsellors co-operate with various social agencies with respect to recreational and educational opportunities and also with respect to the problems of individual children.

B. Scholarships

The scholarship secretary investigates all requests for scholarship aid sent by teachers, counsellors, and social agencies and recommends candidates to the scholarship committee. She also keeps a careful follow-up record, through personal contact, of all children who have received, or are receiving, scholarship aid.

C. Employment

Two employment bureaus are maintained in the continuation schools; one in the employment certification office, and one for children 16 to 18 years old in the Kips Bay Neighborhood Association. School counsellors give part time to the placement work of these bureaus, and to industrial investigations.

G. GUIDANCE IN NEW YORK CITY
(West Side Continuation School)

BERTHA LUCHS
Counsellor West Side Continuation School, 208 West Thirteenth Street,
New York City

Vocational Guidance is the foundation of the Continuation School. The following plan is that which has been developed in the West Side Continuation School and is at present being used there. There will be outlined the work of the preparatory class, the employment bureau, the trade class, the academic class, the assemblies, the follow-up work, and miscellaneous ways and means of accomplishing guidance.

There are two counsellors (known as preparatory class teachers); one, a man, who deals with the boys, and the other, a woman, who deals with the girls.

PREPARATORY CLASS

A. Pupil partially fills out Vocational Service Record, which consists of:

1. Pupil's name
2. Date of admission
3. Date of birth
4. Nationality
5. Name of parent or guardian
6. Pupil's address
7. Date of interview
8. Class
9. Day of week
10. Teacher
11. Previous school record
12. Physical record
13. Social record
14. Pupil's future plans (employment)
15. Personal characteristics
16. Tests (nature, date, results)
17. General remarks
18. Vocational counsellor's recommendations
19. Results
20. Progress record
21. Occupation record

B. Pupil reads and follows directions of the booklet, which consists of:
  1. Definite directions to the pupil
  2. Words of welcome
    a. Extracts from part-time law
    b. What part-time school can do for pupil
    c. Courses of work
    d. Occupational information
    e. Choice of an occupation
    f. Directions for filling out folder
    g. Suggested "reading list"
    h. List of social, educational, and civic centers
    i. Tests
      (1) Achievement
      (2) Intelligence
    j. Series of questions based on topics contained in booklet

C. Pupil is personally interviewed by the vocational counsellor, who completes vocational service record.

D. Pupil is physically examined by physician and co-ordinated with own physician or clinic.

E. Talk given by vocational counsellor. Topic, "Planning Your Future"
  1. Analyze self
  2. Knowledge of field of occupations
  3. Important things to be considered in choosing an occupation
    a. Ability for the work
    b. Wages (at beginning and at end)
    c. Opportunities in the work
    d. Education and training required
    e. Physical conditions encountered
  4. Choice of work
  5. Recommended reading
  6. Where to get required information
    a. People in work
    b. Books, Library
    c. Continuation school

F. Reading books
  1. Vocations for Girls—Weaver
  2. Vocations for Boys—Weaver
  3. Occupations—Gowin and Wheately
  4. Vocational Civics—Giles

  5. Getting a Living—Barnard
  6. Hygiene for the Worker—Tolman
  7. Special studies made by the teachers of the West Side Continuation School

G. Pupil is assigned to class:

  1. According to choice of future occupation
  2. According to present employment (for extension training)
  3. To try out vocation to find self; to find what not to do

H. Co-ordinated with educational, social, and physical centers

I. Co-ordinated with Employment Bureau (Vocational Service for Juniors—Branch in West Side Continuation School)

EMPLOYMENT BUREAU

(Vocational Service for Juniors)

A. Junior interviewed

B. Counselled

C. Placed in employment according to special aptitudes and desire, if possible

D. Scholarship fund

E. Follow-up in employment

TRADE CLASS

A. Talks on trade and allied trades.

  1. Work to be done
  2. Advantages and disadvantages
  3. Personal qualifications required
  4. Wages (at beginning and at end)
  5. Opportunities for advancement
  6. Health conditions
  7. Education and training needed
  8. Supply and demand

B. Assigned reading; books and articles relating to trade and allied trades

C. Laboratory method; trial in shop, checked up and reported in writing to vocational counsellor after 6 weeks

D. Individual guidance; co-ordinated with educational and social centers, also with industry.

ACADEMIC CLASS

A. Occupational talks and discussion.
   1. Work to be done
   2. Advantages and disadvantages
   3. Personal qualifications required
   4. Opportunities for advancement
   5. Wages (at beginning and at end)
   6. Health conditions
   7. Education and training needed
   8. Supply and demand

B. Health talks

C. Readings from vocational bibliography

D. Written English

E. Individual guidance; co-ordinated with educational and social centers, also with industry

ASSEMBLIES

A. Talks
   1. Occupational
   2. Health
   3. Inspirational (character building)

B. Moving pictures
   1. Industry

FOLLOW-UP

A. Vocational Follow-Up

Six weeks after the pupil has been classified, he is reported upon by the teacher, to the vocational counsellor. If he is satisfactorily placed, he remains in the group; if not, he is re-interviewed. Sometimes he is given another six weeks' trial, after which he is reported upon again; and sometimes if his record is very poor, meaning that he is very badly adjusted, he is re-classified and reported upon under the new environment after having had a six-weeks period of re-adjustment. The pupil is kept in contact with the vocational counsellor until he is happily adjusted. This sometimes covers a period of eighteen weeks. At any time after a six weeks' trial period a pupil may change his course if he has advised with the vocational counsellor.

B. Physical Follow-Up

Three weeks after the pupil has been physically examined, the nurse follows up the case to see if the pupil has done what the doctor has suggested.

Miscellaneous Ways and Means

A. Teachers visit industry
   1. Report on visit
   2. Bring back to school and class suggestions made by industry

B. Teachers visit educational, social, health centers, and homes.

C. Teachers' conferences

D. Close co-operation with Y. W. C. A.
   1. Club (Tuesday evenings)
   2. Dances
   3. Summer camp

H. GUIDANCE IN THE PITTSBURGH PUBLIC SCHOOLS

EDWARD RYNEARSON
Director Department Vocational Guidance, Pittsburgh Public Schools,
Pittsburgh, Pennsylvania

The organization of the Department of Vocational Guidance in Pittsburgh consists of a director, one research secretary, two secretaries for the children between 14 and 16 who apply for working certificates, four secretaries in the placement office for persons over 16 years of age, and fourteen counsellors (one for each high school).

The Research Secretary works under the special direction of the Superintendent of Schools. At present, he is engaged on the problem of high-school 'drop-outs.' He visits many homes from which the high-school principals can get no response. His visits reveal the fact that many parents do not know the value of education nor the opportunities offered by the public schools. When the different courses of the high school or the special schools or courses are explained clearly to the parents, many pupils are returned to school.

Each child between 14 and 16 years of age who has completed the sixth grade and who wishes a working certificate must bring one of his parents to the placement office, located in the same building with the Continuation School and the Compulsory Attendance office, where the certificate is issued. The child brings a copy of his school record from the principal. An effort is made to learn from both parent and child the real reason for the child's application and the attitude of each toward education.

If the facts justify it, every effort is made to return the child to school. If it is shown that both parent and child are anxious for more schooling, but that it would be impossible for the child to return to school on a full-time basis, then the part-time school is recommended.

If the child has no position, but insists upon going to work, an effort is made to place him in a position suited to his needs. The employer is then interviewed, either personally or by telephone, to ascertain the child's progress. The child is interviewed from time to time on the days he is in school. In these interviews, an attempt is made to instill high ideals and wholesome attitudes toward his work and his fellow employees. Just before the child reaches his sixteenth birthday, he is given another conference in which the need for further schooling is emphasized, and the opportunities offered in the day and evening schools are stated. Attention is also directed to that branch of the Department that helps young men and women from sixteen to twenty-one years of age.

The placement office for young men and women between sixteen and twenty-one years of age co-operates with the Junior Department of the United States Employment Service. When applicants enroll in this office, they fill out "personal record cards" which give in detail the history of the case including school, occupational and family data, personal ambitions, handicaps, and a personal description of the applicant. While the records are being taken, characteristics, both favorable and unfavorable, are noted in detail, including such items as dress, appearance, mental and physical reactions, approach, and attitude. The secretary's estimate is often checked by following up school and employment records.

It is often possible to obtain this information immediately over the telephone. The placement secretaries also make frequent use of general information tests and trade or performance tests. The counsellor knows the hours, salary, opportunities for promotion, and the general working conditions for the different vacancies. All these data are utilized in trying to place the right person in the right job. After placement, the office follows the young person into the new position and seeks to guide him by interviews or personal visitation. The employers often give the counsellor information extremely helpful for further guidance.

This bureau has published several valuable booklets. Some of these are included in the recently published Bulletin of the Department.[1] The following titles indicate the contents of those in use: "Eight Reasons Why Employers Should Use Our Service;" "Your Part and Our Part in Placement;" "How to Introduce Yourself to an Employer;" "Hints and Helps for the Successful Worker;" and "Remember," a folder containing many pointed suggestions for boys as to personal appearance, cleanliness, and poise.

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[1] Department of Vocational Guidance, Pittsburgh Public Schools.

There is a high-school counsellor in each high school. The teacher appointed to this position is relieved of a part of, or of all, recitation and home-room work. Some of the duties of the high-school counsellor may be understood from the following outline, sent by the superintendent of schools to principals and counsellors, as the minimum of work required in connection with the guidance program in the Pittsburgh high schools.

Junior High School

A. Prospective Junior-High-School Pupils.

Group conferences with regularly scheduled classes in elementary schools for a discussion of the value of the high school.

B. Junior-High-School Pupils

VII-B. Group visitations by regularly scheduled classes of high-school departments in order to get acquainted with facilities of the high school, other than those with which the pupils come in contact.

Group conferences with regularly scheduled classes for the discussion of vocational aims and the filling out of blank form—Vocational Guidance I.

VII-A. Group conferences with regularly scheduled classes for explanation of courses open to VIII-B students and discussion of aims of the various courses.

Conferences with individual students for the determination of VIII-B schedules.

VIII-B. Group conferences with regularly scheduled classes for discussion of significance of subjects pursued in various courses. Conferences on blank form, Vocational Guidance I, for possible changes.

VIII-A. Group conferences with regularly scheduled classes for the discussion of the value in further education. Individual conferences on courses and electives for ninth-year programs.

IX-B. Group conferences with regularly scheduled classes for discussion of importance of vocational aims in planning a high-school program.

IX-A. As in senior-high-school program.

Each junior high school has a general shop offering six kinds of shop work to 7th-grade boys. Courses in the 8th grade are developed on a 'try-out' basis. The shop work in the technical course is organized on a 'rotation plan' to give try-out experience. One activity period each week is set aside for group and individual conference of the report teacher with her report class. Life career clubs for the study of occupations are formed for all pupils of the upper seventh grades and for the ninth-grade students who have not had IX-B Social Science in which occupational study is covered. The eighth-grade students who do not expect to be in school for the ninth grade have a special club.

SENIOR HIGH SCHOOL

A. Prospective Senior-High-School Pupils

It shall be the duty of the counsellor to meet with all prospective incoming pupils twice before they enter high school. When possible, one of these meetings should be planned so that parents may be present when the different courses are explained.

It shall be the duty of the counsellor at this meeting:

(1) To stress the need of training beyond the elementary school;
(2) To explain what the Pittsburgh Public Schools have to offer beyond the elementary school;
(3) To explain the courses offered in the high school and where they are intended to lead;
(4) To explain how the home and school can co-operate for the best interests of the pupil;
(5) To state requirements for place on honor roll or membership in Honor Society.

It shall also be the duty of the counsellor at one of these meetings to advise with all prospective pupils regarding their individual programs of studies.

B. Senior-High-School Pupils

IX-B. It shall be the duty of the counsellor to meet all IX-B pupils in regularly scheduled classes or groups during the early part of the semester. At this meeting, blank form, Vocational Guidance I, will be explained by the counsellor and filled out by the pupils. This meeting will offer opportunity for emphasizing the need of vocational information, for encouraging a study of the vocations, and for urging a thorough preparation of school tasks. The counsellor should also explain his function in the school.

IX-A. An inspirational and explanatory talk to all IX-A pupils in regularly scheduled groups or classes. At this meeting, the counsellor should undertake to explain (1) the kinds of credits required for graduation from each course offered in the high school; (2) the requirements for definite college courses and the necessity of the pupils making early application to the college; (3) the opportunity that comes to pupils who do high grade work throughout their entire high-school course to participate, upon graduation, in the award of scholarships offered by many colleges; and (4) the requirements for entering vocational life on leaving the high school.

This conference should prepare pupils to fill out blank form, Vocational Guidance 14, at a meeting to be arranged by the counsellor later in the semester. This meeting may well be held with the respective report groups.

The attention of IX-A pupils should be called to the vocational possibilities of Pittsburgh and the work of the Public School Employment Offices.

X-B. The counsellor shall meet X-B pupils in regularly scheduled groups when special emphasis shall be laid on Pittsburgh industrial life and the kind of opportunities offered young people trained and untrained.

X-A. The counsellor shall meet all X-A pupils in regularly scheduled classes or groups where he shall undertake to convince the pupils of the value of the last two years of high-school work to them. The opportunities of other educational media than the high schools should be explained to them, but only by way of comparison as to opportunities offered. These other schools should include the public evening high schools, correspondence schools, private business schools, and other special schools of similar character.

XI-B. The counsellor should meet with all XI-B pupils in class or other special groups in order that a review may be made of the best use of electives. This should be done during the first two weeks of the semester, so that any necessary schedule changes may be made.

XI-A. There should be individual conferences with all XI-A pupils during this semester. Such conferences should make certain that every pupil's program is complete to date and that there is a proper understanding of what is to be accomplished during the senior year, both as to immediate vocational aims and college entrance requirements.

XII-B. A short talk to groups or special classes, setting forth the purposes of the local placement offices, should be given.

XII-A. The counsellor should meet all pupils of this group personally who may need his services in arranging for college entrance or for any other purpose. He should also arrange a meeting at which representatives of the placement offices may be given an opportunity to explain what can be done for those not going to college.

Since the vocational guidance has been developed so recently, most of the workers in this field have not been specially trained. Teachers of broad education and sympathy, however, soon develop into excellent specialists. This development is aided greatly by departmental meetings for the discussion of common problems. The success of the Department of Vocational Guidance in Pittsburgh is due, in no small measure, to these departmental meetings.

CHAPTER IV

GUIDANCE ACTIVITIES IN SMALL CITY SYSTEMS

A. INTRODUCTION[1]

The study of occupations in the junior and senior high schools is rapidly being recognized as a vital subject. This is true whether it forms the first step in a systematized scheme of vocational guidance, or is given as an entity in itself. One indication of the growing interest in this subject is the fact that the United States Bureau of Education recognized it to the extent that last winter it devoted one of its conferences to a discussion of this one subject. This was at Detroit in connection with the combined meeting of the vocational education and guidance associations.[2]

Among those who are working in the vocational guidance movement there is a feeling quite generally, that before there can be guidance there must be a background of occupational information on which to build the guidance program. Some make no special effort in this direction until the young people arrive at the placement office. However, some work in the study of occupations must be done even then.

In the nature of large city public school systems it is easier to get work of this type or similar types started than there is in small systems. It is usually possible to get funds to provide whole or part-time investigators, directors, and instructors. Detroit, Providence, Cleveland, Boston, Chicago, Pittsburgh, and Philadelphia are notable examples of cities that have organized fairly extensive and complete vocational guidance programs. It would be more correct to say vocational and educational (or curriculum) guidance, for in many places it is the latter kind of guidance that is first needed.

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[1] This introduction has been adapted from the introductory statements of the Saint Cloud report, prepared by John F. Friese.—L. A. HERR.

[2] Department of the Interior, Bureau of Education, Circular No. 16, March, 1923, contains a complete report of this meeting, prepared by Dr. William T. Bawden.

With the study of occupations a recognized part of the large city curriculum, what can be said for this study in the curriculum of smaller cities? Can regularly organized programs in it be organized in a small city system? If so, what occupations should be selected? Who shall organize and conduct the studies? When and how shall they be given? Where and how may general and local material for studies be obtained? These questions and many others will immediately present themselves to anyone interested in starting the work in smaller localities.

Special Problems of Small Cities

Conditions existing in most small cities give rise to special problems. In some states more pupils enter the high schools and graduate from them than in other states. It is also true that in some sections of the country a greater proportion of the pupils complete the high-school work in small than in large cities. In such places the study of occupations may well be placed in the senior high school rather than in the junior high school, as in the great centers. The character of the occupations studied might also vary considerably because the pupils will naturally seek and strive for a high occupational level. There are fewer juvenile jobs in small cities, and likewise fewer opportunities for first-hand observation or experience. Large numbers of occupations may not be represented locally. These must be brought to the pupils in an impartial manner by one who has had contact or experience outside the local community, or, by one who has made thorough studies of them.

Common Methods

The organized study of occupations has been conducted through a number of accepted media. These include: regularly organized occupations classes with school credit, English classes, and social science classes. The chief weakness of all three lies in the fact that one person, frequently academically trained only, conducts the study of a large variety of occupations with which he has had no personal contact or experience. An additional weakness in the two latter methods is that the study of occupations is not the one and chief aim of the class.

Other methods sometimes used are: group and personal conferences, placement work, visits to industries, part-time employment and socialized manual arts, and assembly talks by people outside the school. Assembly talks have two decided drawbacks. It is difficult to get laymen to present their occupations in an unbiased way, and to tell both the good and the bad points about them. Also, unless the occupation is investigated according to some plan, important phases will be omitted.

Phases of Vocational and Educational Guidance

A complete program of vocational and educational guidance can readily be divided into five parts: (1) occupational information (occupations-study) to serve as a foundation on which to build later work; (2) guidance, usually an individual conference with a pupil to help him analyze himself and the proposed job or specialized education. (Tests, school records of various kinds, home investigations, etc., may all be taken into consideration in this conference); (3) training and education for a definite occupation or specialized education (considering secondary-school pupils); (4) placement of pupils in proper occupation or specialized curricula; (5) supervised progress on the job for those who go immediately into an occupation. Such a program seems possible for all high schools.

The local conditions and the composition of each high-school faculty will of necessity influence the character of the occupations-studies prepared and presented. However, in nearly all high schools one will find at least one teacher in charge of each of the special departments—agricultural, commercial, and industrial. These, with a science teacher and one or two academic teachers, are sufficient for organizing the work and taking up the study of the occupations which seem to be most vital to the children of the particular community. When occupations-study is organized on this plan, someone who has given the subject reasonable study must act as a coordinator in the organization and preparation of the work. All the informal talks should be typewritten, so they may become the property of the school. This is especially desirable of peculiar local occupations and of local data pertaining to all occupations.

In communities where students leave in large numbers at the end of the junior-high-school period these same purposes, modified in detail, could well be carried out in a similar manner. Both general and local occupations should always be presented in order that students may get a broad conception of all fields of human endeavor. The existence of important local occupations will change the list of occupations studied.

Sources of Material

Very excellent and trustworthy material on occupations, nation-wide in its scope, can be secured from a number of sources, as: (1) United States government departments and bureaus, such as Commerce, Labor, Education, Census, and Junior Employment Service; (2) vocational guidance departments of public school systems; (3) university and philanthropic vocational bureaus; (4) specially prepared occupations-study books, some covering one occupation and some a considerable number of occupations; (5) industrial and personnel surveys of cities; (6) local chambers of commerce and commercial clubs.

B. EDUCATIONAL AND VOCATIONAL GUIDANCE IN THE PUBLIC SCHOOLS OF GARY, INDIANA

Albert Fertsch
Director of Guidance and Placement, Gary, Indiana

In Gary the complete educational program is one of guidance. The question sometimes arises as to what part in this guidance program academic training, special activities, and vocational training should play. Again, how can the evening school, Saturday, Sunday, and summer schools function in this program of guidance? The question also arises as to what part of the program is educational guidance and what part is vocational guidance. If Latin and higher mathematics are essential for a person to become a physician or a construction engineer, these traditional high-school subjects become important factors in the program of guidance, whether called educational or vocational.

Supervision, Guidance, and Placement

The guidance program is based on the belief that in any school community there is an endless variety of individuals to be served and an endless variety of community services to be rendered by the citizens of the community.

In Training

In the guidance, supervision, and placement in training, Gary has varied activities for its pupils. Freedom in the selection of courses is granted, but a sufficiently strong organization keeps this freedom from becoming license to enter any activity at any time individual desires may prompt.

Above the elementary grades are the following school divisions: Senior High School, Technical High School, Vocational Trade School, Commercial High School, Junior Technical School, Junior Vocational School and Special Trade Classes with the possibility of special adjustment for individual pupils.

Each division of the school is intended to serve those for whom such school is a satisfactory exit into life. An adequate preparation is alike afforded to those who wish to enter a university and to those who wish to enter business or industry. In addition, a practical course is provided for those who do not enter the high school, but who through necessity or choice go to work as soon as they have reached the legal age.

To meet the problems arising and to accomplish effectively this varied program, co-operation of all the school agencies is essential. The psychological and educational testing division is kept busy making test results available for teachers, supervisors, principals, and the several departments of the school. The counselors keep in close touch with the pupils in their progress in school work. Adjustments of programs are made whenever it is felt that this will better meet the needs of pupils.

In Employment

In placement, supervision, and adjustment in employment Gary co-operates with the Junior Division of the United States Employment Service and the State Vocational Office. In its program the school recognizes that work in a plant or an office may be made an educational and training process of more value to some than attendance at school.

To avoid haphazard choice of employment with consequent worry, waste of time and human resources, the school may well provide an effective organization for employment service. This resolves itself into a co-operative program of home, school, and community enterprise.

The employment service is a part of the guidance program. Its effectiveness is not dependent upon the number of juniors it places in jobs, but upon the manner of its service to the juniors whereby they are kept on the alert to take advantage of opportunities offered for further growth. Each community must go back to the original sources of its population for the background of ideas in its placement program, and then organize activities to further serve the juniors who find it necessary to enter upon employment.

Gary has a general continuation school and an adult day school. In addition, the evening school offers every variety of work to those who wish a service varying from elementary to university extension courses in the academic, vocation, and physical training departments.

Co-operative Program

To secure an effective program of placement and supervision, a co-operative program is essential. The problem of connecting students in the public schools, secondary institutions, and colleges directly with the industrial and commercial activities of the community is only a problem of "providing an opportunity." The beginning must be made from the point of view of the junior if the fullest measure of service is to be assured.

Co-operation of the School

Teachers realize that a number of juniors go to school just because it is the fashion. These students do not want to work, but their parents, wishing to give them the best educational advantages, let them continue in school when it would be to the best interest of the children to put them to work. The school encourages co-operative programs of school and work for a large number of such juniors. Such a program would show juniors how work and education are correlated rather than separated.

Another group of juniors for whom the school provides a co-operative program is that large number who can not economically afford to go to school under the usual conditions. The co-operative program furnishes them an opportunity to contribute to their own support and a chance to continue their education in trades or high schools or colleges.

Co-operation of Industry and Business

There are two practical methods on the part of industry and business in accomplishing a co-operative program with the schools: (1) the alternation during the year of a given number of hours of school instruction with actual employment experience in business and industry; (2) opportunities to grammar-school, high-school, and college students for temporary work during vacation periods, with the aim of later making the employment permanent.

Various arrangements are possible. One plan practiced is that juniors alternate weekly between shop and school. Business and industry take the boys in pairs, so that alternating days they have one of the pair at work while the other is in school. Each Saturday morning the boy who has been at school that week goes to the shop to familiarize himself with the work he is to take up Monday morning. Both methods are now practiced in Gary.

C. EDUCATIONAL AND VOCATIONAL GUIDANCE IN THE PUBLIC SCHOOLS OF JACKSON, MICHIGAN

CHARLES A. WARDNER
Director of Vocational and Educational Guidance, Jackson, Michigan

In September, 1920, the Department of Educational and Vocational Guidance was established in Jackson under the supervision of a Director of Vocational Education. The plan of work as undertaken aimed to supplement the daily school program by helping to adjust the school to the child and to aid the home in giving wise counsel and advice to the child at a critical time in his life and to keep him in touch with the practical side of life and responsive to the interest inherent in everyday things.

Proper guidance is sorely needed at the beginning of the adolescent period. This is the period when the child's whole future life may be either made or marred according to the ideas he gets of his relationship and duties to society and the state. Here lies the great opportunity to allay the rising tide of social instability and unrest by giving the child a clearer conception of the world outside the school-room and by helping him to acquire a real desire for advancement instead of a blind and sullen resentment against the compulsory education law. Often children develop toward authority an antagonistic and disloyal attitude, fostered by ignorance and lack of proper advice. This may sometimes be changed entirely by getting the child to select, even temporarily, a future vocation. He will then have a new interest in his studies and will derive greater and more lasting benefit from them. With this idea in view we have placed in each of our two Intermediate Schools a vocational counsellor who, through individual and group counselling, is reaching every child who passes through the school. The counsellors have justified their positions through the elimination of failures by individual counselling and by adjusting programs.

The counsellors teach classes in occupations. All 8-B students are required to take this work two periods a week for one semester. In this way each child gets a general idea of all of the occupations common in this city and more intensively studies a selected group of occupations with a view to selecting one or more as a possible future vocation. The capacities and training required in each vocation, also the opportunity for advancement, the standards of living of the workers, and the hazards in each are carefully laid before the pupils. Various other questions which will aid the pupils in forming a basis of thought to aid in the selection of a life work are brought up for discussion. The class in occupations follows the outline given in a textbook, but depends quite largely for its material upon information gathered first-hand through trips of inspection to local industries and upon material gathered by the industrial information class.

The industrial information class is composed of a group of teachers, principals, and supervisors who are studying industries under a plan approved by the Michigan State Department of Public Instruction. Each member of the class on completing the course receives State credit for the work towards a vocational certificate. This class meets every Tuesday afternoon from 4:15 to 5:30 and studies certain occupations by the classroom method, often supplemented by lectures given by some individual engaged in a given occupation. Certain other occupations are studied by trips of inspection to local plants and factories. These trips are made every other Saturday from 8:00 to 10:30 A.M. Usually the shop superintendent or some other official conducts the party through the plant and explains details. Each member of the class selects an occupation upon which to write a theme. This material is later mimeographed and is then used by the classes in occupations.

Educational guidance is a continuous process and requires for its success the hearty co-operation and wise counselling of both the home and the school.

A self-analysis blank is given each child soon after entering the intermediate school. This blank, together with a letter of explanation, is taken home to parents. This letter urges the parents to assist the child in filling out the blank. The self-analysis questionnaire is then returned to the school and kept in the home-room in a file as long as the student remains there; it then passes to the next home-room with the student. Each semester it is brought up to date, so that it provides a cumulative record of the child's progress and achievement as well as a record of the child's personality, aptitudes, and special abilities.

The students in the intermediate schools are given the opportunity to select from a wide range of elective studies. Many of these studies are what we call "trade-sampling," or "trade tryout" courses. The home-room teacher, assisted by the counsellor, helps each student to select these elective subjects wisely with a view to their importance in helping him prepare for his probable future vocation. If a child has properly selected his electives and has had proper advice and counselling, by the time he finishes the intermediate school he not only should have a strong desire to complete the high school, but he should also know somewhat definitely what group of occupations his future vocation will probably be in.

The Bureau of Guidance and Placement under the United States Department of Labor, Junior Division, was established in Jackson in February, 1921, and is now doing an excellent piece of work in placing young people in desirable positions. The record of each applicant is carefully looked up and also the prospective place of employment is investigated. After a child is placed in employment, he is 'followed up' to see that he is making good, and if not, the reasons therefor are investigated and adjustments made. In many cases probable failure is turned into success and the young person, instead of losing his employment, is helped to improve himself to such an extent that he receives promotion with increased pay. All young people under twenty-one are urged to make use of this Bureau, which is free to the employee and the employer. Young people are registered, whether they are attending school or have left school some two or three years ago. All employment has educational value to a greater or lesser extent, and in many cases the young person, through contact with industry, has been led to see that he needs more education in order to succeed. Quite a percentage of the young people leaving school to enter industry go back to the all-day school.

The compulsory attendance law requires that all children who have not reached seventeen and who have not completed the tenth grade must attend school eight hours a week. This results in keeping a large number of young people in all-day school who would otherwise drop out and go to work. The part-time school, through co-operation with the department of guidance and placement, is helping many young people to adjust themselves and to prevent the tragedy of becoming industrial misfits. A large number of the part-time school students go back into the regular all-day school. There is a provision in the James Law which enables the school to give credit of four hours of the required eight hours for actual training in employment such as an apprenticeship course would give. This provision is being taken advantage of, and through co-operation with the Employers Association a machinist apprenticeship system has been organized. Boys are placed in a class by themselves and are given English, shop mathematics, mechanical drawing, and machine shop practice, one forenoon each week. Contracts are made with the apprentices which assure them of proper and thorough training in the machine shop. This will result in making all-round machinists and toolmakers. It has the advantage of giving them actual machine shop training in the factory under factory conditions. The boys are paid a liberal rate for their time, which includes the time spent in school.

The department of educational guidance is woven like a fabric throughout the whole school system. Many of the academic departments are lending valuable aid, for example, the English department, in which vocational subjects are used as themes for English composition. The teachers of each academic subject point out to their students the value of their subject in preparing for various occupations. In this way many students have been interested in choosing a group of occupations for future study. They may then desire to talk with older persons engaged in occupation. For instance, a boy expresses a desire to become a physician, then his teacher may arrange for him to meet a physician and talk the subject over. An appointment is made for a conference. Often this has resulted in a business or professional man taking a personal interest in some particular boy.

Work permits are issued by the supervisor of attendance, whose office is in connection with the department of vocational education and guidance. All placements are made through the Junior Placement Bureau, which is also connected with the department of vocational education and guidance. All of these agencies co-operate and are closely co-ordinated in one department. Valuable assistance is also given by the Department of Measurements, which has charge of the administration of intelligence and educational tests in the schools. The card records of this department are accessible to the Department of Educational and Vocational Guidance.

Valuable assistance is being given by the local clubs which take great interest in students needing advice and outside influence. The members write letters to students who are completing the intermediate school, urging them to continue through the high school. They write personal letters to each student who fails to enter the high school or who drops out before completing his course. They entertain as dinner guests each graduating class and give advice and assistance to those desiring to go through college. A scholarship fund has been created to assist worthy students to obtain higher education, and in many ways most valuable assistance has been given to the department of educational guidance.

The outstanding steps of advancement achieved during the two years in which the department of vocational and educational guidance has been in operation at Jackson may be summed up as follows: (1) The part-time school and the Junior Placement Bureau have become firmly established. (2) Vocational counsellors and the classes in occupations have been inaugurated in the intermediate schools. (3) The industrial information class has been made a permanent institution. (4) Manual training and mechanical drawing courses have been revised and brought up to date. (5) Household mechanics and sheet metal work have been introduced. (6) A local Home Economics Association has been formed which is building up courses based upon local conditions. (7) A machinist apprenticeship system is being established in connection with the part-time school.

D. EDUCATIONAL AND VOCATIONAL GUIDANCE IN THE PUBLIC SCHOOLS OF LINCOLN, NEBRASKA

HARRIET E. TOWNE
Director of Vocational Guidance, Lincoln, Nebraska

In Lincoln, the Department of Vocational and Educational Guidance is centered in a Child Welfare Department, which includes Census, Attendance, Home and Student Adjustments, Employment Certification and Follow-Up, and Vocational, Educational and Social Guidance. The work is handled by a director in charge of the department, an attendance assistant, a visiting teacher, two office assistants, an enumerator in each grade building, and from one to four vocational reading teachers in each building who are also counsellors in the broadest sense of the term. This work is greatly augmented by virtue of the active support and co-operation of the Chamber of Commerce, a Scholarship Committee, and various social and contributing agencies.

I. PURPOSE

Throughout the seventh, eighth, and ninth grades any phase of school procedure should have as one of its main goals vocational, educational, and civic guidance of the pupils. This is a period of marked change in the lives of students; they are forming opinions of what they would like to do, changing their minds frequently, and really beginning to think along the lines of vocations and citizenship.

Vocational Reading is introduced throughout these grades, so that at least for one or two periods a week children are given an opportunity, with help, to learn about vocations and the choosing of them, about life, its work and responsibility, and how best to prepare for it.

Tersely stated, the purposes of this vocational reading are: (1) to acquaint the child with what the world offers to him in the way of opportunities (occupations; nature of, conditions in); (2) to show him how to fit himself for the world's work (preparation, education, character building); (3) to teach him to evaluate himself and his opportunities; (4) to teach him that success is dependent upon character, upon suitable education and preparation for life work, upon adjustments of his own abilities to the requirements of the field he is to enter, and upon right choices; (5) to teach him that service and contentment are as real to his success as remuneration and advancement.

II. CONTENT OF COURSE

Vocational Reading Courses (Twice a Week)

VII-B Group

Classroom. *Biography:* to lead pupils to appreciate strong points of these who have lived through the ages, to lead them to realize that success has been due to strong points in their character, to help them to discover that, in our own lives, there is always a significant relation between character and success; to show them that service to the city, state or nation is the basis of recognition; and that each has made some type of contribution which has made him live.

VII-A Group

Classroom. *The Value of an Education:* to show how an education functions in success, happiness of the individual, and service; to acquaint students with the sources of education and the type and degree necessary to success in various vocations and professions; to teach the necessity of adequate preparation for any phase of life work.

VIII-B Group

Classroom. *The Elements of Character That Make For Success:* to help students to realize that success is relative; to help students to realize that certain qualities bring certain results; to help students to realize that success is the result of an attitude of mind coupled with energy; to help students to desire to possess certain qualities for the power it will give them, personally, and for the ability it will give them to serve the community and all society.

VIII-A Group

Classroom. *The Choice of a Vocation:* to give the child the experience of making a choice and evaluating his own abilities and the requirements of the vocation he chooses; to help him to appreciate what further preparation is necessary; to motivate his future education.

III. METHOD

A. Classroom

1. Teachers of Vocational Reading Classes.
   a. Selection of teachers personally and professionally adapted to this phase of school work.
   b. Motivation-Slogan: "Sincerity of Approach."
   Practice: Devices to make course as practical and real as possible.
   c. Teachers act as counsellors—vocational, educational, and social.
2. Students.
   a. Personal investigations on part of students. Few texts are used, many sources, abundance of current material, students encouraged to cultivate the spirit of first-hand investigations.
   b. Reports and discussions by students.
   c. Occasional talks in classroom by business and professional men and women.

B. Visits to Industries

1. Furnish first-hand information concerning business and industry (undertaken jointly by schools and Chamber of Commerce).

2. Correlated with classroom subjects, as VII-B, Retail Trade Group, correlated with commercial geography; VII-A, Banking, Insurance, and Investment Group, correlated with arithmetic; VIII-B, City Planning Group, correlated with history; VIII-A, Industrial Promotion Group, correlated with industrial geography, etc.

3. Preparation for trips. Study in classroom of questions relative to various places to be visited. Trips correlated with certain subjects in course of study (classroom correlation). Questions prepared jointly by business and professional men and Child Welfare Bureau.

4. Visits.
    a. Talk on general topic related to the trip, by a business or professional man, to entire group of 400 or 500 students, meeting by grade at central point.
    b. Divided into 20 or more groups for visits to business houses or to industries. Business men furnish the laboratories and act as guides and informants.

5. Reports by each student before classroom groups. Students act as reporters, and carry back full accounts of visitation to other members of their group.

6. Industrial conference, at Chamber of Commerce. Follows closely upon visits. Presided over by two competent business or professional men. Representatives bring to conference questions that have arisen out of their trips and study for discussion and elucidation by leaders. Acts as 'clearance' for the study and trips for the semester.

C. ''Civic League''—Organization of Junior High-School Students

1. Under auspices of schools and Chamber of Commerce.

2. Students as ''Junior Citizens.'' These students are practicing citizenship in their own group—care of building and grounds, character building, school, home, and community activities.

3. Efficiency Certificates. Granted by schools and Chamber of Commerce. For character and certain degree of scholarship.

D. Counselling and Advising

1. Curriculum
2. *Preparation* for ''life work''
3. Helping them to *shape character*
4. Helping them to *evaluate self* in terms of *service, citizenship, vocations*
5. Moral, social guidance
6. Employment guidance

E. Attendance Department and Work of Visiting Teachers

1. Counselling
2. Advising
3. Home and school adjustments

E. EDUCATIONAL AND VOCATIONAL GUIDANCE IN THE TECHNICAL HIGH SCHOOL, ST. CLOUD, MINNESOTA

John F. Friese
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This report of work accomplished presents some of the experiences and conclusions after more than two years of trial at the Technical High School, St. Cloud, Minnesota. This is a school of 700 pupils and 35 teachers in a city of about 17,000 population. It is an agricultural, manufacturing, and railroad center, the like of which exists in many parts of the United States. Occupations-study is here considered as a required extra-curricular study. It is required for graduation in addition to the usual units of high-school work.

There are several methods of providing occupational study. First, in all of the manual arts work the giving of occupational information is made one of the four principal objectives of that work. Information about the principal trades and allied trades represented in our school shops, such as working conditions, salaries and wages, preparation, health of workers, products, etc., is definitely planned for at various points in each of the various shop courses. In addition, instructors are ever on the alert for opportunities to present such information as special situations arise, especially in exploratory courses.

The second method of giving this study is to have various high-school teachers prepare from one to four informal talks each, about the same number of occupations. These talks are followed by questions and discussions and frequently by individual conferences. The teachers are selected because of their experience with, or special relation to, each occupation; something more definite and connected than a mere academic study of the occupation is thus secured.

In the local school twenty-two instructors, twelve men and ten women, last year gave forty-eight talks about that number of occupations. All freshmen and sophomore students are required to attend eighteen talks during those years, the idea being to direct their thoughts toward a great variety of occupations both general and local. Seniors are required to attend twelve talks, and their selection should indicate, in some instances at least, a trend toward one of the six or seven principal divisions of occupations. Senior talks are modified to the extent that only those occupations or divisions of occupations are considered which high-school graduates generally select.

OCCUPATIONS STUDIED

In order to give the students a comprehensive view of all fields of human endeavor, both local and general occupations are studied. The list selected for study in St. Cloud follows (some are for boys alone; some for girls alone; some for both): Accounting, banking, bookkeeping, building trades, business administration, college entrance, commercial art, costume designing, dairying and livestock, dentistry, dressmaking (commercial), electrical work, engineering, farming (general), foods work, garage work and automobile selling, granite cutting, government service (all public), homemaking, homemaking and commercial occupation both, industrial chemistry, institutional management, interior decoration, journalism, laboratory work for women, law, library work, manufacturing (production), marketing (farm), mechanical and architectural drafting, medicine, metal trades, millinery, milling, nursing and dietetics, pharmacy, printing and engraving, salesmanship (general-retail), secretarial work, social-civic work, statistical work for women, stenography, store service, teaching, tea room management, trade schools, transportation (railroad).

Material on local occupations has been secured in four ways: (1) through the gathering of special data at the time of the school census; (2) through the United States census special reports; (3) through questionnaires filled in by wage-earners of families represented in the schools; (4) through personal investigations by the instructors.

ORGANIZATION OF MATERIAL

All the material, general and local, has been so organized that various important phases of a large number of occupations will be considered. In the case of the questionnaires referred to above, all of those for each separate occupation were studied and a consolidated sheet made out from all the replies.

The various phases of each occupation which are stressed are: (1) a general description of tools, work, etc.; (2) the workers—their number, how recruited, how trained, organized, turnover, etc.; (3) requirements—physical, educational, and mental; (4) working conditions, as hours, health, liability to accident, etc.; (5) wages, salaries and returns, and length of training period; (6) specific vocational advice as to best schools to attend, apprenticeships, costs of special educational training courses, proper local people from whom to ask advice, school advisors, and the application for, and successful holding of, positions.

SCHEDULES

The following program has been found to work out very satisfactorily in our organization. The forty-five minute talks given to the lower classes are given three times each during the first semester. They are placed during the day when the largest interested groups can attend, and also once in the after-school help period. Sometimes entire classes, if especially interested, are excused from their regular work to attend a talk. Teachers must sometimes be relieved of a class in order to meet the groups assembled in some room for this study.

Senior talks are shortened to not more than thirty minutes. Each is given once during the second semester. The twenty-minute home-room period with ten minutes in addition before school, and the after-school help period are used for this purpose.

In the St. Cloud organization occupational study supplies the background for further advisement in the form of individual conferences which are at present required of all seniors before graduation. Our plans, when more time for the chief vocational advisor is available, are to have personal conferences with all students early in the first semester of each year. This is started in a small way now in the home-room period of twenty minutes before classes begin in the morning.

All freshmen students fill in a personal card which indicates their ambitions, best-liked studies, etc. Parents also fill in a section giving their hopes and plans for the future of their children. There is also a place for the chief counsellor to fill in with any notes about school records, tests, etc. These cards follow the pupil through the school, and are used at the time of senior conferences. The chief counsellor and individual students together select the occupational study teacher, and frequently outsiders also, with whom they have the conferences.

If we but broadened the pupils' occupational background and directed their thoughts toward their future occupations, we would feel repaid for our efforts. We know that in addition it is also an extremely practical social and economic science study, since this group is regarded by many educators as one of the three or four principal high-school groups of studies.

In conclusion the four main ideas constantly kept in mind may be summarized as follows:

1. The information given must leave with the pupils all of the truth in an unbiased manner. Otherwise we are open to deservedly severe criticism.

2. Studies must be made as interesting to young minds as possible. All studies and their teachers will not always be interesting the first time the work is undertaken. It is often possible as the studies are given again and again to find devices and to develop the material in an interesting manner.

3. The information given and brought out, to be of greatest value, must be used definitely in some way either through educational or vocational advisement or both, before the pupil leaves school.

4. As the most vital result of any advisement program these studies should help teach the boys and girls methods of helping themselves to weigh, study, and analyze their aptitudes and the occupations in which such aptitudes would successfully and happily function, and to use reasonable methods of determining what education or training is necessary.

In checking the members of two graduating classes numbering nearly 250 we have found large numbers in occupations or in schools about which they were given occupational information and in which they were advised and directed, though always with the final choice left solely to them. Deducting some for errors in directing thought into the wrong channels, there has been a sufficiently large number of cases where we can see and approve the results of our work to warrant a continuation of the plan.

CHAPTER V

A PUBLIC SCHOOL PROGRAM FOR COLLECTING AND USING OCCUPATIONAL INFORMATION

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Need for Reliable Information

Much of the criticism of the vocational guidance movement in this country may be attributed to the increasing objection to having early decisions forced upon young persons by the larger experience of adults. Despite the recognized need for providing adequate counsel and guidance to assist individuals in intelligently choosing both educational opportunities and life occupations, constructive criticism continues to be directed toward those practices which force unreliable information and unwarranted decisions upon either children or adults. Present-day complexities resulting from the many changes in our social and economic development, demand that public school pupils no longer be required to base such important decisions and adjustments upon mere opinion or meager data.

In keeping with this belief, an increasing number of school systems are attempting to furnish all pupils with accurate knowledge concerning the relative opportunities and requirements in the social, economic, and larger personal aspects of the various life callings. Whether or not these schools succeed fully, is a matter of relative values. On the other hand, it is only too obvious that in case they should fail completely in their obligation to keep pupils from choosing blindly by presenting all of the related facts and helping to interpret these in terms of existing conditions and tendencies, sooner or later most pupils are destined to make educational plans and occupational selections either with or without adequate factual guidance. Consequently, it is the opportunity as well as the responsibility of school counsellors and teachers for each level of learning to inspire the pupils and to present them with reliable information in order to broaden their occupational horizon in keeping with the spirit of each subject of instruction and the whole school organization of which the counsel and guidance activities are an integral part.

Collecting and Interpreting Occupational Information

It is inevitable that the ultimate success of any school counselling program depends, to a large extent, upon adequate and continuous provisions being made for collecting, evaluating, and imparting useful data resulting from local and outside studies of important occupations. These occupational surveys which have been conducted in Detroit during the past two years have resulted from a policy of the Board of Education to supplement the training and experience of all school counsellors and teachers who were assigned the specific responsibilities for assisting pupils either in choosing possible educational advantages or in acquiring suitable occupational knowledge, or in both.

A decision of the Board of Education and the University of Michigan to co-operate in providing adequate training facilities for school counselling made it possible to obtain the services of over one hundred advanced students—teachers, counsellors, or supervisors connected with the public schools—in securing and checking the desired results within a comparatively short period. Then, too, it was discovered beyond a doubt, that actual participation in these business-like contacts which necessarily involved a scientific attitude toward problems of investigation and analysis in selected occupations, as well as the subsequent interpretation of these data in the light of school needs, furnished the different counsellors and prospective counsellors with valuable insight into present-day methods, conditions, and relationships in the various divisions of occupational work.

As a result, a large number of the principal industrial, commercial, and professional occupations in the city have been surveyed to secure information about the work, the main advantages and disadvantages, the qualifications and training, the possibilities and requirements, the remuneration, and the like (see Table I).

TABLE I. TYPES OF INFORMATION USED AS A BASIS FOR OCCUPATIONAL COUNSELLING IN DETROIT PUBLIC SCHOOLS

1. *Nature of work*
2. *Main advantages and disadvantages*
    - (a) Factors that cause physical or nervous strain
    - (b) Factors that interest and develop the worker
    - (c) Factors that restrict mental growth
    - (d) Factors that are in other respects important as affecting the welfare of the workers (*i.e.*, liability to accident, occupational diseases)
3. *Qualifications and training needed*
    - (a) General education
    - (b) Necessary technical education
    - (c) Manipulative skill
    - (d) Other requirements; qualities essential such as accuracy, etc.
4. *Possibilities in requirements of occupation*
    - (a) Provisions made for systematic instruction of workers
    - (b) Necessary or technical knowledge
    - (c) Manipulative skill
    - (d) Extent to which occupation can be learned "on the job"
    - (e) Line of promotion
5. *Remuneration*
    - (a) Wages
    - (b) Special
6. *Hours of work*
7. *Seasonal demands in work*
    - (a) Busy season
    - (b) Slack season
    - (c) Fluctuation in employment
8. *Are workers organized?*
9. *Entrance age*
10. *Time required to learn duties*
11. *Is supply of labor adequate to meet demand?*
12. *Is demand for labor increasing or decreasing?*
13. *What is the source of supply?*
14. *Common deficiencies of workers*

The various occupational investigations and analyses have been made by those who were seeking training either for full-time or part-time school counselling or for similar advisement work, and were developed in each case with little or no additional expense to the board of education by persons possessing some previous experience or familiarity with the particular occupations in question. Throughout this co-operative program of collection and dissemination of vocational information the investigators have taken advantage of all similar surveys and studies that have been conducted in other cities and states. In fact, the divisions of field work were undertaken only after careful investigation of each available source of factual material related to the problem at hand.

The results of these completed occupational investigations and analyses have been evaluated and arranged in the particular form shown in Charts I and II, in order that adequate facts pertaining to the possibilities and demands in the different vocations of which these selections are typical examples, may be made easily available for constant school use. It will be observed that these composite statements selected from the surveys of department stores, printing trades, clerical positions, candy making, nursing, industrial chemistry, toolmaking, and carpentry trades, have been organized and published in the form of source-bulletins, because of the urgent need for having these helpful data as ready reference. Several of the persons who were directly concerned in developing adequate programs of systematic educational direction and vocational guidance for their respective intermediate or junior high schools, high schools, continuation schools, and special classes, have offered many valued suggestions both in preparing and using the various types of information that have been collected for their different purposes.

The divisions of information resulting from each survey referred to in these charts and reported in complete units in the bulletins on "Opportunities and Requirements in Local Occupations,"[1] have been carefully selected and checked by those school counsellors, house principals, and teachers whose names appear in connection with the findings for each of the occupational studies, with such assistance as was needed from the central supervisory offices. Tables II, III, IV, and V show the contents of the units or sections dealing with department store occupations, printing trades, clerical positions in manufacturing plants and commercial establishments, and occupations in nursing, respectively. Much indebtedness is due the many representatives of the industrial, commercial, and professional establishments in Detroit who have so generously aided the public schools in collecting these helpful sources of reliable information by their generous co-operation with the writer and the several members of his vocational counselling classes, which were conducted by the Vocational Education Department of the School of Education, University of Michigan, during the past two years.

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[1] This series of bulletins on "Opportunities and Requirements in Local Occupations" is available in three parts at present: Part I includes department stores, chain grocery stores, commercial art, drafting rooms, toolmaking in large production plants, sheet metal trades, industrial chemistry, power machine operators in textile industry, special salesmanship (automobiles, bonds, stocks, insurance); Part II includes carpentry trades, printing and publishing trades, nursing, social service, stationary engineering, structural engineering, candy making, cigar making; Part III includes clerical positions, telephone operation, baking industries, wholesale drug industries, auto mechanics, selected building trades, laundry work, photography, dentistry.

TABLE II. DEPARTMENT STORE OCCUPATIONS

TABLE OF CONTENTS

(Part I)

Occupation	Pages
Wrapper-Inspector	6, 7
Cashier-Inspector	6, 7
Stock Boy or Girl	8, 9
Marker	8, 9
Messenger Boy	10, 11
Wagon Boy or Jumper	10, 11
Helper	12, 13
Driver or Chauffeur	12, 13
Shipping Clerk	14, 15
Aisle or Booth Girl	14, 15
Salesperson	16, 17
Head of Stock	16, 17
Buyer	18, 19
Floor Manager	20, 21
Manager, Superintendent	20, 21

TABLE III. PRINTING TRADES

TABLE OF CONTENTS

(Part II)

Occupation	Pages
Compositor	12, 13
Make-up Man, Stone Man	12, 13
Machine Composition	14, 15
Proofreader (Copyholder)	14, 15
Pressman	16, 17
Pressfeeder	18, 19
Stereotyper	18, 19
Electrotyper	20, 21
Photo-Engraving Operator	22, 23
Etcher	24, 25

CHART I. SHOWING COMPOSITE ANALYSES OF SEVERAL SELECTED DIVISIONS DISADVANTAGES, QUALIFICATIONS

Type of Vocational Information	Department Stores[1]	Printing Trades[2]	Clerical Positions[3]
	Salesperson	**Compositor**	**Office Machine Operators**
1. Nature of Work Occupational analysis	Salesperson is a representative of the firm to the customer and largely determines the success or failure of the store by determining merchandise turnover, service, and the reputation of the store. Keeps counter space in order and arranges and takes care of stock. Assists customers in making selections. Answers questions, gives directions. Makes sales, makes out various kinds of sales slips. Gets floor manager's O. K. on irregular transactions. Reports to buyer movement of stock. Sends sales slip with money and goods to inspector. Counts back change and gives it with parcel to customer. Sends sales slip with money and goods to inspector or sends money and check up tube. (In some stores salesperson operates cash register and wraps merchandise, etc. Takes weekly and yearly inventories, etc.)	With copy assembles type by hand; sets composing stick to measure, picks up type from case, justifies and spaces it in stick, and transfers each stickful to galley. Distributes type, cuts rules, pulls proofs by hand or on proof press. Corrects proof returned from proofreader, after approved turns it over to stoneman. AD COMPOSITOR: Sets display ads and some of the headlines in newspaper. BANKMAN: Bankman puts the "takes" in proper order, places them on a galley, numbers them, and turns them over to proofpress operator or proves them himself. Keeps general track of the material which is constantly assembling. Newspaper.	Operate calculating machines, adding machines, bookkeeping machines, mimeograph, multigraph, and billing machines, stenotype, dictaphone, comptometer, Elliott-Fisher addressograph, etc.
2. Main Advantages and Disadvantages (a) Factors that interest and develop the worker	Meeting and sizing up people. Knowledge of stock and materials. Salesmanship instruction in some stores, history of merchandise and its manufacture, stimulating sense of color, texture. Opportunities for advancement.	Variety in copy and necessity for originality in designing pages and forms and in selecting the composing types.	Interest in results, mechanism, speed, Mental alertness, stimulates growth. Unusually satisfactory working conditions.
(b) Factors that cause physical or nervous strain	Nervous strain during rush hours and from incessant demands of customers. Long hours of standing. Responsibility of handling money and operating cash register where used.	Close application and accurate handling of small pieces of type —general demand for accuracy and speed.	None, if reasonable demands are made upon operators. Excessive demands on accuracy and speed tend to cause nervous strain.
(c) Factors that restrict mental growth	None.	None.	None.
(d) Factors that are in other respects important as affecting the welfare of workers (i. e., liability to accident, occupational diseases.)	Basement work not always satisfactory because of poor ventilation or dampness of washed air.	None ordinarily, but an exceptional case of lead poisoning has been reported.	Dirty work on some machines occasionally causes operators to avoid it. Slight possibility of accident.
3. Qualifications and Training Needed	Intermediate. High school preferred by some of the largest stores.	Good elementary or high school education.	Intermediate school, high school desired.
(a) General education (b) Necessary technical education	Must know stock as to kind, variety, quality and values of merchandise, position on shelves or in dept. as well as in reserve. System of sales slip for handling all kinds of sales. Know store well enough to direct customers. Must know approach and all other elements of a sale. Display stock. Amount of material required for finished article.	Typesetting, proofreading and imposition. Point system, measurements. Principles of design, color harmony and lettering in the composition of forms. Interpretation of sketches, layouts, diagrams, weights, and kinds of paper.	Knowledge of particular machines. Usually 6 to 10 week courses in factory schools, some department stores, business schools, or commercial high schools.
(c) Manipulative skill	Showing and presenting merchandise. Measuring and handling goods. Operating cash register in some stores.	Knack of setting, making up and distribution of type rapidly.	Handling of machines. (Quantity of work is determined by individual capacity.)
(d) Other requirements: Qualities essential such as accuracy, etc.	Courtesy, good will, good taste, personality, memory, good eyesight and color sense, neatness, honesty, accuracy, ambition, originality, ability to co-operate and follow directions.	Quick memory, mental alertness, accuracy, initiative, patience, painstakingness, system, orderliness, and neatness, Artistic sense.	Accuracy, quickness, mental alertness, neatness, orderliness. (Operators of Elliott-Fisher machines, should have bookkeeping.)

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[1] This investigation was conducted by Margaret Boland, Flora Anderson, Alice Gordon, and Grace Jones.

[2] This investigation was conducted by Rex B. Cunliffe, D. E. Dunham, and N. E. Craig.

[3] This investigation was conducted by Ruth L. Ross, Grace S. Robinson, Edna E. Bromley, and Helen M. Blue.

[4] This investigation was conducted by Katherine M. Gartner.

of Unrelated Occupations as to Nature of Work, Main Advantages and
and Training Needed

Candy Making[4]	Nursing[5]	Industrial Chemistry[6]	Toolmaking[7]	Carpentry Trades[8]
Preparer	**Practical Nurses**	**Special Chemist**	**Die-Maker**	**Carpenter (and Joiner)**
(Work may be done sitting or standing.) Sorts nuts, blanches and cuts nuts, washes and cuts fruits. Keeps bench and dishes clean and orderly. Assists molder, wrapper, and packer. Places the whole fruits and nuts on creams, where nuts and fruits are the decorations.	This group includes persons without any particular training or registration. The Michigan State Law provides for the training and registration of so-called "trained attendants" but none of these were found in Detroit in the course of making this survey. Occasionally practical nurses were found acting as nurses aides, that is assistants to trained nurses. Assisting in hospitals, chronic cases, caring for sick in the home, carrying out physician's orders, care of house and children.	Every plant has some unusual substances to be tested, new materials come in—a competitor's products, oils, waxes, paints, waste, ores, and, in some cases, foods and drugs. The routine chemist would not know how to handle these special tests. The special chemist also looks for the causes whenever there is trouble which routine tests do not get at. He also improves factory processes and products. This work often takes him out into the plant to observe operations and to collect samples.	Making, blanking, and forming dies for adding machines, typewriter, and automobile parts.	Does house framing and inside woodwork on frames, trim, jambs, moldings, etc.; puts in window frames, hangs doors, etc.; builds simple staircases, etc.; does interior finishing in hard and soft wood; makes concrete forms, etc.
Pleasant and comfortable kind of work. Offers little to develop the worker, except in ability to follow directions and doing detail work well.	Varied types of homes and people.	New samples and different products have to be analyzed. Specifications for the purchase of material have to be worked out. Each new problem met and solved develops confidence.	Variety of work offered; new problems to solve.	This work furnishes considerable variety from day to day. Outside work is healthful and invigorating.
None.	Very long hours, hard physical work, usually great responsibility.	Exacting requirements of accuracy and attention to detail would be trying to one of nervous temperament.	If any not continuous.	Physical strain on heavy work.
Little talking during work, therefore 8 hours offer no exchange of ideas.	Not enough knowledge. No time for reading, lectures, amusements, etc., when on the case.	None.	None.	Specialized branches such as shingling, floor laying, etc., are unvaried.
Safe and clean work; not monotonous.	No hazards if careful, otherwise infections, communicable diseases.	Explosions and accidental poisoning are less easy to guard against in special tests on new material than in routine work.	No general occupational disease or accident liability.	Some danger of accident from falling, etc.
Little general education needed, elementary school would be sufficient.	Eighth grade, at least, desirable, not standard. Must read and write English.	College graduate.	8th grade, preferably high school.	Intermediate school.
Cleanliness and wholesomeness needed.	Taking of normal respiration, pulse, temperature. Common treatments under orders.	College work in quantitative, organic, and physical chemistry, usually required.	Read and interpret blueprints. Preparatory and advanced mathematics. Knowledge of general shop mechanics and materials. Names, care, and uses of common shop tools and machines.	Knowledge of trade methods, construction work and using tools; ability to read blueprints and make drawings; knowledge of materials, mathematics, etc.
Speed in detail of work.	Practice in housework and ordinary care of the sick.	Same as for routine with wider knowledge of special apparatus such as colorimeters, stills, extractors.	Operation of all standard machines, and bench work to precision limits.	Skill in handling various tools.
Free from every trace of communicable diseases, present Board of Health certificate.	Cheerfulness, high standard of service, good moral character, sympathy, sense of responsibility, etc.	Same as routine, together with initiative and self-confidence.	Accuracy, speed, application, adaptability; good eyesight, good health; ability to visualize; steady nerves.	Accuracy, initiative, strength, endurance, good eyesight; adaptability, alertness.

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[5] This investigation was conducted by Gladys Little and Helen Bradfield.

[6] This investigation was conducted by Sherman R. Wilson.

[7] This investigation was conducted by George H. Snadden and James P. McGuinness.

[8] This investigation was conducted by Earl M. Stauffacher.

CHART II. SHOWING CONTINUED ANALYSES OF EACH POSITION AS TO POSSIBILITIES IN REQUI
(Continued from Chart I which lists (1) Nature of Work; (2) Main

VOCATIONAL INFORMATION	Salesperson	Compositor	Office Machine Operators
4. Possibilities in Requirements of Occupation (a) Provisions made for systematic instruction.	Instruction in system. Definite salesmanship instruction given individually and in groups in the largest stores.	Preceptor system. No organized apprenticeship system. Shifting worker.	None, but usually individual instructions are given for using the different makes of machines.
(b) Necessary or technical knowledge	Kind, variety, etc. of merchandise. Store procedure and regulations. Principles of salesmanship if work is intelligently done.	Sufficient knowledge to make the worker a profitable producer. Ideals of the craft and technical knowledge.	Knowledge of machines mentioned or those used in particular office in question.
(c) Manipulative skill	Deftness in handling goods, displaying stock, and operation of cash register (where used).	Necessary facility in handling type and its composition.	Accuracy and speed as required in work.
(d) Extent to which occupation can be learned in establishment	Entirely, but study of salesmanship a great aid.	Entirely with such outside library and research work as is needed.	Usually slight without supplementary training.
(e) Line of promotion	Head of stock, assistant buyer, buyer.	Apprentice, journeyman, make up, stone man, machine man, proofreader, foreman.	To higher clerical positions.
5. Remuneration (a) Wages	Generally flat wage is between $12.00 and $25.00.	First year $12, second year $15, third year $20, fourth year $25, fifth year $30 to $35.	$18.00 to $37.50 a week, depending upon nature of work.
(b) Special	"Spiffs," prize money, etc., for moving slow selling mdse. and oversales.	$40. Union Scale $46.50.	None.
6. Hours of Work	About 8 hours.	48 hours a week, open shop. 44 hours a week, union shop. (Open shop conditions largely in Detroit.)	About 8 hours.
7. Seasonal Demands in Work (a) Busy season	Between Thanksgiving and Christmas, April to June, and during special sales.	None.	None
(b) Slack season	February, July and August.	None.	None.
(c) Fluctuation in employment	Constant for most. Extras for busy season.	Slight.	Constant.
8. Are Workers Organized?	No.	20% in Detroit.	No.
9. Entrance Age	17 years up. 18 years minimum in some stores.	17 years.	17 or older.
10. Time Required to Learn Duties	One week to 2 months.	4 to 5 years. Union requires 5.	2 or 3 weeks, depending on individuals.
11. Is Supply of Labor Adequate to Meet Demand?	Supply not always adequate.	No. Not enough apprentices.	Yes.
12. Is Demand for Labor Increasing or Decreasing?	Increasing.	Increasing. General industrial growth of country.	Increasing.
13. What is the Source of Supply?	Those rising from minor positions or coming from other stores. Inexperienced people. Married women.	Apprentices recruited from schools and journeymen.	Public school bureau and private agencies, business schools, commercial high schools, factory schools.
14. Common Deficiencies of Workers	Lack of interest; failure to appreciate opportunities. Insufficient knowledge of merchandise; disobedience to rules. Lack of general education.	Lack of ambition, low ideals, failure to stick to work.	Lack of concentration, understanding of work, personal responsibility, neatness, speed.

REMENTS OF OCCUPATION, REMUNERATION, HOURS OF WORK, SEASONAL DEMANDS, AND THE LIKE
Advantages and Disadvantages; (3) Qualifications and Training Needed

Preparer	Practical Nurses	Special Chemist	Die-Maker	Carpenter (and Joiner)
Some individual instruction in methods of doing work.	If registered with Central Bureau, one lecture per week. (Hope to give course at Cass.)	Instructions as to special methods are given by head chemist.	None, except where there are apprenticeship or training departments.	There is no apprenticeship system in this city, so workers are upgraded.
None.	Dependent upon job and doctor.	A broad scientific training is required as a foundation.	Application, best acquired in the plant by experience.	This may be acquired by studying trade journals, going to evening school, studying the building code.
Skill involved in simple operations for speed and accuracy.	Skill in caring for the sick and in house work by repetition of duties.	Experienced men are required.	Speed and accuracy in all specialized operations.	Speed and accuracy in hand and machine operations.
This work can be learned entirely in the factory.	If capable, may be entirely learned on cases under doctor or supervisor.	Special applications may be learned on the job.	In some plants entirely; others only partly.	Practical methods but not desired technical.
Little opportunity for promotion to better positions.	None unless to take attendants' courses or regular training.	May go into research work, become head of department, or even superintendent.	To executive depending on ability, experience, and training.	Helper, carpenter, foreman, house contractor, jobbing and alteration carpenter.
$14.00 to $22.00 a week. The majority receive $16.00 and stay there.	$28 average a week with board.	$175.00 to $250.00 a month.	$.75 to $1.50 an hour, depending on experience, training, and service.	$.85 an hour (union scale).
Sometimes an opportunity to buy stock in the company.	Usually none.	None.	Stock certificates; anniversary checks; group insurance; apprenticeship bonus.	Double time for overtime during the busy season.
8 a. m. to 5. p. m. One hour for lunch. Saturday afternoon off.	12 to 24 hours with uncertain relief depending upon case.	Eight or nine hours.	8 to 9 hours a day; 40 to 50 hours a week.	8:00 a. m. to 5:00 p. m., with one hour for lunch. 8 hours a day, half time on Saturday.
Before Christmas and Easter, 8 months heavy production.	Always in demand.	All year.	Dependent upon general manufacturing conditions.	During summer months.
4 months of light production.	Practically none.	None.	Same.	During winter months.
Steady work for most regular employees.	Fluctuates greatly.	Very little.	Employment usually steady.	Depends upon the amount of construction work.
No.	Nurses Registry effective in collective bargaining. All do not use Directory.	No.	No.	Approximately 1,600 union carpenters and about 9,000 non-union carpenters.
17 years. (15 or 16 if allowed working papers.)	18 years and up as long as useful.	21 to 45.	16 to 18 years of age.	Nearly all skilled workers are over 18 years of age.
A few days to one week.	No requirements.	Four to six years beyond high school.	4 years or more.	About four years.
Yes, always.	Not enough who are really capable.	Yes.	Yes, at present.	Ordinarily the supply is adequate to meet demand.
Neither.	Increasing greatly.	Little change.	Increasing at present.	In comparison with the other building trades, carpentry is a declining trade.
Girls leaving school and those following advertisements in windows or newspapers.	Through doctors and usually unreliable employment bureaus.	College graduates with scientific training, with experience in other plants.	Graduate apprentices; other shops; promotions.	Young men usually begin as unskilled carpenters on concrete form work and outside work, older men as laborers.
Disinterested, lazy, wasteful, quarrelsome or trouble breeders, lack of cleanliness, lack of speed.	Not reliable in carrying out doctor's orders; variation of personal standard; preparation too variable for safety.	Lack of sufficient scientific training.	Lack of mechanical ability; no originality; no native ability; dissatisfaction; too slow; lack of appreciation of the value of accuracy; lack of interest.	Representing himself as skilled and competent when he is unskilled and incompetent. Lack of trade knowledge and general background.

Stripper 24, 25
Photo-Engraving Finisher 26, 27
Router and Blocker 26, 27
Proofer 28, 29
Pressman in Charge 28, 29
Stockman 30, 31
Lithograph Engraver 30, 31
Transferer 32, 33
Offset Pressman 32, 33
Steel and Copper Plate Engraver 34, 35
Plate Printer 34, 35
Die Stamper 36, 37
Hand Binder 36, 37
Cutter 38, 39
Forwarder 38, 39
Ruler 40, 41
Finisher 40, 41
Rotogravure Pressman 42, 43

TABLE IV. CLERICAL POSITIONS IN MANUFACTURING PLANTS AND COMMERCIAL ESTABLISHMENTS

TABLE OF CONTENTS
(Part III)

Occupation Pages
General Clerical Workers 8, 9
Switchboard Operators 8, 9
Office Machine Operators 10, 11
File Clerks 10, 11
General Typists 12, 13
Stenographers 12, 13
Bookkeepers 14, 15

TABLE V. OCCUPATIONS IN NURSING

TABLE OF CONTENTS
(Part II)

Occupation Pages
Practical Nurses 46, 47
Student Nurses 46, 47
General Duty Nurses 48, 49
Private Duty Nurses 48, 49
Public Health Nurses 50, 51
Office Assistants 52, 53
Executives, Supervisors 52, 53
Instructors 54, 55
Laboratory Technicians, Dietitians and Anesthetists 54, 55
Hospital Social Service 56, 57
Miscellaneous Branches 56, 57

CENTRAL SERVICE FOR EXCURSIONS AND INFORMATION

Another extended source of valuable information for assisting counsellors and investigators as well as teachers has been made available through an established Central Clearance Service. The different schools have access to this central plant-visitation service which arranges for, and schedules, visits with employers, firms, factories, courts, Public Library, Art Institute, and the like. Unnecessary duplications and conflicts are thus avoided, and all school representatives naturally benefit by pooling the results of their varied contacts, since a record is kept of each place visited. This central office record covers all information on the various activities of each establishment, their attitude toward visiting, preference as to days and hours, size of groups, age of students, etc. By means of complete records and revisions from time to time, this clearance service is peculiarly suited for assisting teachers and counsellors in planning the most worthwhile visits for classes, groups, and individuals.

Other types of much needed service that have been rendered by this office are: (1) Cataloging and filing information and literature on general education and vocational training courses in the United States. This includes a complete survey of the kinds and the qualities of the courses which are offered locally, whether in public or non-public institutions. (2) Securing various kinds of guidance information and factual material on occupations for school counsellors and others concerned. These continuous studies and other reliable findings, which have proved to be helpful sources of information, are made available for immediate reference purposes, in order to aid school counsellors, house principals, and classroom teachers in providing adequate counsel and guidance for the boys and girls in their respective school organizations.

VARIOUS METHODS OF DISSEMINATING INFORMATION

As the Detroit Public Schools are attempting to have systematic counsel with all children during their entire school attendance and during their early employment training and adjustments outside, desirable selections both from these different composite findings and the more detailed information in the central office are disseminated through the following provisions for each school organization:

(1) Through initial interviews and conferences for classifying pupils and for encouraging those who are entering the school to think more seriously of their educational and occupational advantages.

(2) Through follow-up and adjustment of pupils who did not succeed in making tentative plans or suitable programs during their first year or years.

(3) Through special classes, clubs, and group meetings for talks and discussions by school representatives or by specialists who are qualified to speak and answer questions on specific occupations.

(4) Through courses of study and special provisions in English, social science, physical science, health education, practical arts, etc., by imparting related vocational information and by showing the connection between these subjects of instruction and the occupations which involve them.

(5) Through co-operative checking of cumulative records with respect to the results of all tests and especially for outcomes of each pupil's performance inside (and if possible outside) of school.

(6) Through all school and outside agencies which interview parents and children, investigate home and working conditions, and in any way pass upon the necessity for individual children to leave school.

(7) Through placement officers, co-ordinators, and others that advise, place, and adjust boys and girls who are qualified for part-time work, who desire positions upon leaving school, or who wish to transfer to other employment.

In connection with each occupation considered, the school counsellors co-operate with the different teachers in disseminating information relative to the nature of the work, the advantages and disadvantages, the qualifications and training, the possibilities, and the remuneration and advancement through reliable reading matter, group discussions, individual interviews, student reports, talks by specialists, and planned excursions. This organized information supplements that imparted through the regular school subjects by presenting such related facts as can help pupils to weigh values and choose their future courses and life work. Aside from the direct guidance values, these studies also include brief interpretations of economic life, industrial ownership, labor problems, related organizations, scientific management, supply and demand, health conditions, and the development of our present-day producing and service groups, in order to encourage a wholesome attitude toward work and workers in each occupation studied. Typical divisions of such important life callings as mechanical pursuits, printing and publishing, mining, food manufacturing, textiles and clothing trades, professional and allied occupations, engineering professions, commercial occupations, and many others are studied profitably from time to time.

Special Course for Imparting Occupational Information

In the work developed at the Central High School, for example, a good part of the time was given to the study of individual occupations. After the topic, "Finding Your Place," had been discussed, each student was asked to select three vocations in which he was interested. During the semester, he was required to prepare a report on each of these vocations and present it to the class. In this way, the student secured definite information on the vocations he was interested in and each student in the class had the opportunity to get some sort of a view of the many opportunities open to boys and girls. No student was required to study all of the vocations that were discussed, although all were encouraged to take notes.

Before the student commenced his study, he was given material on "How to Find Out About a Vocation." Each student was required to prepare some sort of a preliminary report before he wrote the final one which was to be presented to the class, and for that reason he was also given a questionnaire to be used in his particular study. This questionnaire was adapted from the one which was adopted and used in securing data for training school counsellors. It is now available with the composite findings in bulletins that have been published in three parts by the Detroit Board of Education (see Charts I and II).

It will be noted that this questionnaire closely follows the topics listed in Table I, and that their numbering is much the same. Each student was supplied with a bibliography, which included the local publications, and he was expected to do a certain amount of related reading. Magazines, newspapers, and many miscellaneous publications were consulted along with the reference books. However, it was made very clear that he must not depend altogether on information secured from current literature and books, but would be expected to consult with men and women engaged in the selected occupations, and to observe for himself, through direct contact with the work as it was being done, significant facts about important divisions of the vocations. As nothing he could read would give him an accurate conception regarding the vocation, he was expected to supplement his readings by conferences and observation. As the student found out important things regarding his vocation, he noted them on the spaces following the proper questions. When he had finished his initial survey, he brought it to the teacher for conference and approval. Then he was ready to get his report in final form for its presentation to the class.

Sometimes the report was read to the class. Where the group of students studying one occupation was large, the report was divided and a part was presented by each student. Incidentally, some of the reports were most interesting and some were quite dull. At times, students after presenting the report proper would entertain and enlighten the class by dramatization of some of the situations found in the vocation. One group studying the physician portrayed for the benefit of the class, a rather sketchy glimpse of a doctor's office, and a committee on music insisted on giving a concert. Each student presented his three reports at different times during the semester.

The following statements, and questionnaire were supplied to each one of the students in the class as a part of the assignment:

HOW TO FIND OUT ABOUT A VOCATION

In finding out about a vocation, there are two main sources of information: observation (seeing the work for yourself) and reading. When Benjamin Franklin was a small boy, his father took him about their city to all the shops where men in the different occupations could be seen at work; to a blacksmith shop, to a tailor shop, to a store, to a printshop, etc. In this way, young Ben had the opportunity to get some valuable first-hand information, which he used later. To-day you can not do much better than follow this example. One young fellow recently thought he would like to be a dentist, so, happening to know some dentists, he visited them, saw them at work, looked at their tools, and asked all the questions he could think of about their occupation. Another boy who wanted to be a civil engineer, not knowing any engineers, visited some work which he thought might have been planned and was under the direction of civil engineers, saw what was being done, talked with the men when possible, and tried to strike up an acquaintance with those who seemed to be in charge. A girl who was interested in millinery, visited all the shops of that kind she could, and, exactly as the boys had done, tried to get all the information possible. You can easily get such first-hand information about almost any vocation in your locality, and it is always wise to get such information in addition to that obtained from reading. Apply this method to your own problem. How could you learn about your proposed vocation from observation? How would you go about it?

When Benjamin Franklin was a boy, there was practically no other way to get the necessary facts about an occupation except by observation, but there are now many books telling about the different vocations and good articles are appearing daily in newspapers and magazines. You will find a list of useful books in the last chapter of this pamphlet.[2] Read all of the books and magazines you can, and be sure to compare what you find there with what you found by seeing and asking. Don't fail to watch the newspapers for information about your vocation. Newspapers and magazines will give you the very latest information.

Following this chapter you will find a list of questions and answers concerning the occupation of salesperson in a department store. The questions are adapted from those used in the series of publications on ''Opportunities and Requirements in Local Occupations,'' and the answers are taken from the section on department store occupations in Part I. Everybody has seen and done business with a retail store salesman, and knows fairly well many things about this occupation. Read this report over carefully, and you will discover what things one might well know about a vocation and how such questions are answered.

The best way for you to study your present choice would be for you to copy these questions on two or three large sheets of paper, leaving plenty of room after each question for the answer. Then, as you find out about dentistry, or law, or salesmanship, or mechanics, whatever your choice may be, you can note the information after the proper question. This is not only the best way, but it probably is also the easiest way. Try it and you will see if that isn't true.

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[2] Cunliffe, R. B. *Plan Your Progress.* Central High School, Detroit, Michigan, 1923.

REPORT ON OCCUPATION

Occupation: Salesman *Student:* John Smith

1. Make a list of the things which this worker actually does

Salesperson is a representative of the firm to the customer, and largely determines the success or failure of the store by determining merchandise turnover, service, and the reputation of the store. Keeps counter space in order and arranges and takes care of stock. Assists customers in making selections. Answers questions, gives directions. Makes sales, makes out various kinds of sales slips. Gets floor manager's O. K. on irregular transactions. Reports to buyer movements of stock. Sends sales slip with money and goods to inspector. Counts back change and gives it with parcel to customer. Sends sales slip with money and goods to inspector or sends money and check up tube. (In some stores salesperson operates cash register and wraps merchandise, etc. Takes weekly and yearly inventories, etc.)

2. Main advantages and disadvantages

a. What are the factors that interest and develop the worker?

Meeting and sizing up people. Knowledge of stock and materials. Salesmanship instruction in some stores, history of merchandise, and its manufacture, stimulating sense of color, texture. Opportunities for advancement.

b. What are the factors that cause physical or mental strain?

Nervous strain during rush hours and from incessant demands of customers. Long hours of standing. Responsibility of handling money and operating cash register where used.

c. Are there any factors restricting mental growth? If so, name them. None.

d. Name any other factors that are in other respects important as affecting the welfare of workers (*i. e.*, liability to accident, occupational diseases.)

Basement not always satisfactory because of poor ventilation or dampness of washed air.

3. Qualifications and training needed

a. What general education is required?

Intermediate. High school preferred by some of the largest stores.

b. What special or technical education is required?

Must know stock as to kind, variety, quality, and values of merchandise, position on shelves, or in department, as well as in reserve. System of sales slip for handling all kinds of sales. Know store well enough to direct customers. Must know approach and all other elements of a sale. Display stock. Amount of material required for the finished article.

c. What manipulative skill is required?

Showing and presenting merchandise. Measuring and handling goods. Operating cash register in some stores.

d. How long will the preparation take, or how long will it take worker to learn duties?

Six months to a year in the department.

e. What is the probable cost of preparation? None.

f. What school can one attend to prepare for this occupation? None.

g. Name any other requirements: qualities essential, such as accuracy, etc.

(1) Special health or physical requirements.

(2) Experience necessary.

(3) Personal qualities required.

Courtesy, good will, good taste, personality, memory, good eyesight and color sense, neatness, honesty, accuracy, ambition, originality, ability to co-operate and follow directions.

4. What are the possibilities in the requirements of the occupation?

a. What provisions are made for the systematic instruction of workers?

Instruction in system. Definite salesmanship instruction given individually and in groups in the largest stores.

b. What necessary or technical knowledge is acquired?

Kind, variety, etc., of merchandise. Store procedure and regulations. Principles of salesmanship if work is intelligently done.

c. What manipulative skill is acquired?

Deftness in handling goods, displaying stock and operation of cash register where used.

d. To what extent can the occupation be learned while at work?

Entirely, but study of salesmanship a great aid.

e. What is the line of promotion?

Head of stock, assistant buyer, buyer.

5. What income may be expected in this occupation at first and later?

a. Give beginning salary or wages. How paid?

Generally flat wage is between $12.00 and $25.00. ''Spiffs,'' price money, etc., for moving slow selling merchandise, and over sales.

b. What would the probable income be ten or fifteen years after entering the occupation?

c. What are the years of active work in this occupation?

6. What are the hours of work? About 8 hours.

7. Are the demands in work seasonal?

a. Busy season. Between Thanksgiving and Christmas. April to June and during special sales.

b. Slack season. February, July, and August.

c. Fluctuation in employment, if any. Constant for most. Extras for busy season.

8. Are the workers organized in unions or similar associations? No.

9. What is the entrance age? 17 years up. 18 years minimum in some stores

10. Is the supply of labor adequate to meet the demand? Supply not always adequate

11. Is the demand for labor increasing or decreasing? Increasing.

12. What is the source of supply? How can one enter the occupation?

Those rising from minor positions or coming from other stores. Inexperienced people.

13. What are the common deficiencies of workers?

Lack of interest; failure to appreciate opportunities. Insufficient knowledge of merchandise; disobedience to rules. Lack of general education.

14. References and sources of Information

This course was organized in two general divisions: (1) problems of the worker, and (2) studies of vocations. The nature of the vocational problems is suggested by the topics in Table VI. The student started with a consideration of his life as he is now experiencing it, and proceeded from that topic to the others, until he reached a discussion of the world he would live in after leaving school. This discussion involved some of the important economic factors which would greatly influence him. There is a close relationship between school life and vocational life which the student often does not appreciate. His successes and failures in school will often influence tremendously his successes and failures in his vocation. It was believed that he ought to know this; he ought to know about *what* he will gain from school and *how* he can get the most out of it. Of course, "Finding your place," and "How to find out

TABLE VI.—AN OUTLINE OF THE COURSE AS IT WAS FINALLY ORGANIZED

I. Problems of the worker:
  (a) Going to school
  (b) Your opportunity
  (c) Finding your place
  (d) How to find out about a vocation
  (e) Your studies
  (f) Your first job.
  (g) Success
  (h) The greater world
  (i) Wealth, wages, and thrift
  (j) Books can help you

II. Studies of vocations:
  (a) Preliminary report; questionnaire
  (b) Final report; theme to be presented to the class

about a vocation'' were included, but a further explanation of these topics is hardly necessary. Experience has shown us the necessity for emphasizing ''Your opportunity,'' for it was discovered in an examination of questionnaires which the 11th- and 12th-year students filled out for the Detroit Board of Commerce that 64 percent of the boys chose five occupations; 76 percent of the girls, five; and 83 percent of both boys and girls thought of only ten. Seventy-four percent selected vocations in the professional group, although only 5 percent of the gainful workers in the United States are found in that class. Forty-two percent of the girls selected teaching. Only one of the 581 students who filled out questionnaires indicated any interest in the industry which has made Detroit famous, the automotive industry, and very much less than one percent selected manufacturing, in which over 40 percent of Detroit's gainful workers are found. The student can make no choice unless he knows from what things he can choose, so a great deal of time is given to a survey of opportunities open to our boys and girls. Topics (f) and (g) refer, respectively, to getting a job and then making good at it. Topic (h) is a discussion of the organization of the usual business concern, a stock company, partnership, etc. In this discussion, the student also meets possibly for the first time, the employment manager and the welfare worker, and learns what strikes and lockouts are. The section on ''Wealth, wages, and thrift'' was included because the problem of capital and labor, the law of supply and demand, the principles of the determination of wages are of great importance to him. It was believed that the problems suggested by each one of these topics had a very close relationship with the student's vocational well-being.

GENERAL CONCLUSIONS

If our boys and girls are to be aided in making intelligent judgments and decisions as a result of knowledge and vision of relative possibilities and demands, it behooves the public school authorities to make reasonable provisions for each one of the two following closely related activities. (These will require little or no additional expense, if all school representatives are seriously concerned with the problems involved.)

(1) Reliable surveys of the various local occupations to determine the importance of each division of work, the constancy of demand for employment, the opportunities for advancement, the working conditions, the remuneration and other rewards, the qualifications and training needed, and the like.

(2) Continuous opportunities for all pupils to study the results of these and other surveys and to make their own less reliable investigations both to assist in their educational and occupational choices and to add to their general education through some understanding of present-day requirements, conditions, and relationships.

While these typical surveys and studies are not designed to force early decisions upon pupils, recent investigations make it evident that there is need in every school organization for studying intelligently the problems of an effective choice, both as to self-expression and efficient service. In other words, the spirit of modern public school education suggests the urgent need for collecting, evaluating, and imparting reliable information about important industrial, commercial, and professional occupations. If our school instruction is to truly reflect the economic demands and the social activities and tendencies about us, these provisions for securing and using factual material should not become incidental in emphasis, but rather an increasingly definite and functioning part of all comprehensive school programs.

CHAPTER VI

VOCATIONAL GUIDANCE IN COLLEGES AND UNIVERSITIES

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The material drawn upon for this chapter was gathered in the latter part of the school year 1922-1923.[1] It is representative of practice and common opinion in 176 'standard' institutions of higher learning; including public, private, and sectarian colleges and universities of recognized standing throughout the country.

Assuming that these institutions typify practices and trends in vocational guidance among the colleges and universities of the country, the following generalizations may be stated:

1. Colleges and universities are increasingly recognizing obligation to provide both group and individual vocational guidance for their students.
2. Colleges and universities are increasingly recognizing that guidance is an integral contribution to education; that vocational or any other phase of guidance is separable from the process of education only for purposes of analysis or emphasis; hence that vocational guidance is most effective when given as one phase of a composite which in entirety is education itself.
3. Colleges and universities are increasingly recognizing that, under our dominant dynamic-organic educational ideal, vocational (professional) guidance is the core about which other phases of guidance—physical, cultural, educational, what not—may be grouped to the end of most effective motivation and establishment in serviceable social living.

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[1] Mr. Stone had gathered extensive information concerning the topic of this chapter in connection with his doctoral thesis, ''Personnel Service in Education.'' The disastrous fire at Berkeley, which destroyed his entire library, interfered seriously with his program of publication. We persuaded Mr. Stone, however, to present rather hurriedly some of the main conclusions of his study.—*Editor.*

4. Colleges and universities are increasingly meeting the obligation imposed by the foregoing recognitions through the organization of specialized service of orientation and guidance which coordinates all helpful agencies and activities under unitary direction—agencies and activities curricular, extra-curricular, and extramural. The tendency is growing to designate this service as "Personnel," appropriating a term common to comparable service within the institutions of state and industry. While this term is new in education, the concept may be tentatively defined as organized, specialized effort by which the uniqueness of the individual student may be recognized, preserved, and served to the end of greater personal and social efficiency.

Among the 176 institutions contributing data upon this topic, 112 report some form of organization looking towards effective personnel (guidance) service. Three steps, or phases, are embraced within the comprehensive program of personnel towards which colleges and universities are tending: viz., selection of students, development, and placement.

Selection. There is definite indication of a more rigorous selection of students admitted to higher educational privileges. The college entrance examination is the most favored modern means; the Thorndike intelligence test is most frequently employed. Twelve of the reporting institutions use it, while nineteen colleges and universities employ quite a variety of other tests—Army Alpha, Thurstone, Otis, Terman, etc. Five make use of tests devised by local authorities. These tests are used, of course, for purposes beyond predictive bases in college admission and placement—for diagnostic and prophylactic purposes in student development. Generally, reports do not indicate very certain or clearly defined results from the use of these tests; however, it must be remembered that their employment in any way is comparatively quite recent. It is yet too early to have realized largely upon them. The outstanding trend is towards the use of tests in higher education. Only one institution reports a "lack of faith generally in psychological tests and vocational guidance."

Development. The second step, or phase, of the comprehensive program of guidance is that of development. Among the 112 institutions reporting systematized efforts at guidance,[2] various forms of organization appear. There are four fairly defined ones; viz., the faculty adviser, the dean adviser, the faculty advisory committee, and the co-ordinating director. There are no hard and fast dividing lines between these forms. On the contrary, there are various over-lappings in supplementary practices which in some cases approximate gradual transition from one type to another.

Thirty-seven of the 112 institutions reporting guidance organization employ the first-named, or faculty adviser, plan. This plan assigns from ten to thirty students to each faculty member, who acts as individual counsellor concerning vocational objectives and all matters pertaining to preparation for life careers—physical, educational, cultural, etc. This is the earliest type of organization and is probably an inheritance from the tutorial system in vogue in English institutions of higher learning.

In the largest sub-group of institutions—57 in number—responsibility for guidance is placed chiefly upon dean advisers (thirty report deans of men and twenty-seven deans of women, the last figure undoubtedly an incomplete report). The 'student deanship' has had a comparatively recent and rapid development, with emphasis upon the social phases of guidance. However, any college dean of men or dean of women who gives social counsel with a time perspective must of necessity do so in the light of professional (vocational) objectives. And the same responsibility is inescapable by the dean whose immediate contribution to guidance is chiefly educational.

Ten colleges and universities report faculty advisory committees. This is largely a still later development, a manifestation of the movement to centralize guidance in the hands of a restricted and specially selected body. These committees vary in size from six to sixteen. The larger numbers, however, are reported as unwieldy, and the tendency is toward even more restricted responsibility.

The smallest sub-group of institutions is that employing the co-ordinating director. Eight institutions subscribe in principle and approach in practice to this plan. It is the most recent development; all of these colleges and universities have organized or reorganized upon their present basis within the last five years. This plan provides centralized responsibility, which insures initiation and conduct of guidance free from duplications and conflicts, while at the same time utilizing by co-ordination all possible cooperative agencies and activities. Two institutions may be cited as illustrative of advanced embodiments of this conception. These are Northwestern University and Dartmouth College, which have within the past year given a modest amount of publicity to their personnel ideals and organizations.[3]

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[2] Even the sixty-four reporting no organization undoubtedly do not mean that guidance is wholly ignored; but rather that informal, unorganized influences are depended upon to meet the needs of their students.

On the whole, our reports from colleges and universities present a record of movement towards formal organization for guidance of students: in only one case is there a report of abandonment of organization after its establishment. On the other hand, in addition to the 112 institutions now possessing guidance systems, 17 report definite steps looking towards early establishment of systematized scientific service of personnel. For five of these, authorization has already been given.

While responsibility for guidance in the development of students is vested in most colleges, as indicated above, in one of four forms of organization, some institutions employ various supplemental agencies and activities. "Life career" courses, or courses in the study of occupations, are offered by eighteen of the colleges reporting; eight offer this course for freshmen only; one offers it for sophomores and juniors; one for juniors and seniors, while all others throw open the course for election by students of any standing. Credit for the course ranges from none to three semester hours.

Another supplementary type of guidance, the "vocational conference," tends toward a similar end by a less formal method. This consists of a series of meetings, occasional or at stated intervals, in which speakers representative of various life careers present in somewhat general outlines the conditions of their respective callings. These group conferences are usually followed by round-table and individual contacts. Twelve colleges and universities report programs of approximately this character.

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[3] Hopkins, L. B. "Personnel at Northwestern," *Jour. of Personnel Research*, 1:277-88. Husband, R. W. "Vocational Guidance at Dartmouth." *Sch. and Soc.*, 11:407-8.

Various other supplementary agencies and activities, useful in student development, are noted; *e. g.*, physical welfare, senior advisors, special library facilities, student self-government, pre-guidance through close articulation with high schools, cumulative records, and miscellaneous student organizations.

Placement. The final step, or phase, in a well-rounded program of personnel or student orientation and guidance occupies a place of increasing importance in institutional reports. Ninety-four colleges and universities attempt for some or for all graduates occupational contacts, *i. e.*, vocational placement. Procedure in this phase of service varies: eight report placement through specially designated officers; forty-two through bureaus; twelve through committees; and eighteen through "Y" co-operation. Two look to placement through alumni organizations only, while an even dozen others are served by both alumni organizations and placement bureaus.

Of the 94 colleges and universities attempting placement for graduates, 34 undertake a similar service for undergraduates also. Twenty-seven provide a measure of post-guidance, following up placements with cumulative records.

Our discussion has dealt thus far with the administrative activities of colleges and universities—what their officers do or think ought to be done as an adequate service of orientation and guidance—the institutional point of view. This covers undoubtedly the major phase of the subject. However, student experience and opinion are coming to occupy a place of increasing importance in higher education and should be included in any attempt to describe the situation in colleges and universities. A brief body of data may be included in the space allotted. These data come from (1) a group of 149 students eliminated from a representative university (entering class of 1919-1920), and (2) a group of 578 students of the same entering class who have persisted to the end of the course; *i. e.*, the senior class of 1923. Since the experiences and opinions of these two student bodies are substantially in accord, and since only generalities may be stated here, the two groups will be considered together and some of their contributions offered as representative of student point of view. Approximately 12 percent of them matriculated in college without any defined life-career objective and more than half of them changed objectives once or oftener as a result of college contacts—the most common tendency being a shift towards vocations of more moderate cost, time, or intellectual demands. Approximately 10 percent are still without settled life-career objectives. This might appear as an expected or even desirable status according to one view of college vocational responsibility. This is not in consonance with student point of view, however. For while there is a minority of positive—almost vehement—opinion that college is not a vocational preparatory agency, yet it is a very small minority. The preponderant belief among students in higher institutions of learning is that college graduation should be equivalent to equipment for effective functioning in professional fields of the world's work—to use a very common expression: "The graduate should come out of college with more than just a diploma." This does not at all imply that the student attitude condones in general a narrow specialization. On the contrary, the attitude is that, while guidance should tend to be *vocationally* restrictive, yet college guidance should be *educationally* amply liberalizing and cultural. To these ends students demand an increasingly comprehensive program of guidance, and thus coincide closely with the view of institutional officials already expressed.

As to sources of guidance, student experience presents some interesting data. In the first place, only slightly less than half of the students making contribution to these data disclaim individual guidance of any sort. Their testimony shows that in general what guidance they have received has been group guidance, or guidance that is negative in character: "Positive guidance is always for the group; the *individual* is considered only in case of discipline."

Credit for individual guidance, among the half of the students who have been fortunate enough to receive it, goes mainly to the home, and only in minor amount to the school. Considering the chief sources, credit goes first to family, second to friends, and then to the schools—this despite the insistence of educationists that the home is no longer competent to give adequate vocational and educational counsel. As to constructive suggestions for more adequate service of guidance in higher education, the student attitude strongly supports institutional demands for an all-round service of guidance which will co-ordinate all possible agencies and activities for individual, personal, positive service, *i. e.*, personnel service.

While space available for this report necessarily limits it to a rather bare outline of practices and trends in guidance as shown in both institutional and student points of view, the foregoing data indicate unmistakably that our colleges and universities are now moving toward a more comprehensive program of personnel service for students selected with discrimination, developed harmoniously in consonance with the common demands for culture and vocational efficiency, and judiciously placed in life pursuits where they may best serve their own interests and the higher needs of society.

CHAPTER VII

ILLUSTRATIONS OF VOCATIONAL GUIDANCE IN COLLEGES AND UNIVERSITIES

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Dr. Stone has presented in the preceding chapter a concise summary of vocational guidance in colleges and universities. I have been asked to supplement his significant data and conclusions by giving a brief account of what is done in a few institutions that have been most active in developing guidance programs. Dartmouth and Middlebury Colleges, and Stanford and Northwestern Universities have been chosen for this purpose. Three distinct types of organization are represented in the guidance work of these four institutions. In one the college dean is in charge; in another, a faculty committee; and in each of the others, a special officer.

Dartmouth College[1]

Dartmouth College has a Director of Personnel Research (the title has been changed recently from Associate Dean) appointed for the special work of occupational advice and placement. This officer brings together the large body of knowledge on file in different departments of the college about each individual student. ''The registration cards of an entering class contain many valuable facts concerning the earlier life of the freshman; the office of the Physical Director has an excellent record of each man's physical condition; the Dean's office has a record of his scholarship, his prizes, honors and delinquencies; the Department of Psychology has a record of his intelligence rating based on the tests given each autumn to the freshman class; the members of the faculty have undertaken to make personal estimates annually of all men under their instruction. In giving the personal ratings each faculty member estimates the student on four personal traits:

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[1] Richard Wellington Husband. ''Occupational advice.'' *Dartmouth College Magazine,* January, 1921.

1. Intelligence—Ability to grasp a situation; alertness of mind.
2. Aggressiveness—Personal force; initiative; assurance; decisiveness.
3. Reliability—Evidences of solid character; dependability; sense of responsibility; perseverance; attentiveness; punctuality.
4. Personality—Bearing; neatness; courtesy; personal acceptability.

"The Associate Dean aims to have at least one private interview with each undergraduate every year. Freshmen are interviewed the second semester. An interview with a freshman takes the form of an analysis of his scholarship, his physical condition, his intelligence test, his interests and activities, his choice of a life career and his plans of preparation for it. All known facts about the individual are used in ascertaining the fitness of the individual for any suggested occupation. His experience up to date is considered and analyzed and finally each student is urged strongly to take some position involving regular work during the summer vacation for the purpose of trying himself out, of avoiding idleness, and of increasing his sense of responsibility and regularity."

MIDDLEBURY COLLEGE[2]

At Middlebury College the vocational guidance program is directly in charge of the Dean of the College. The program includes:

1. The collection of information about prospective students.
2. Required study of occupations in freshman year.
3. Lectures for freshman given by department heads.
4. A bulletin, "Programs for College Students."
5. Lectures by men of prominence in various important occupations.
6. A special vocational guidance section in the library.
7. An undergraduate committee for assisting in the choice of vocational speakers and subjects.
8. Assistance of the college paper.

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[2] Edgar J. Wiley. "Organizing the Liberal Arts College for Vocational Guidance" (21 page bulletin).

9. A personal rating system.
10. Contacts with business and industry.
11. Counselling.
12. An appointment bureau.
13. Following up and securing the co-operation of the graduates of the college.
14. The keeping of records.

STANFORD UNIVERSITY[3]

Stanford University furnishes a good illustration of an institution in which vocational guidance is placed in charge of a faculty committee. The committee, as recently reorganized, consists of five members, including the dean of men and the dean of women.

It is the duty of this committee to co-operate with the departments of the university: (a) "In studying the vocations which are open to graduates of the university and the kinds of training needed by those who enter these vocations;" (b) "In disseminating among students the information necessary to make an intelligent choice of a vocation and to arrange a course of study preparatory to entering the vocation chosen."

The means for disseminating information so far used may be briefly stated as follows:

1. Establishing in the University Library a section of books, pamphlets, and bibliographies relating to vocations.
2. Providing occasional talks on particular vocations.
3. Holding vocational conferences on opportunities other than teaching open to women.
4. Arranging individual conferences between students and members of the faculty.
5. Publishing the "Bulletin of Vocational Information."

The Bulletin of 200 pages contains information concerning fifty-four occupations in the fields of agriculture, art, commerce, education, engineering, government service, home-economics, journalism, law, library work, medicine and public health, ministry, music, public speaking, science and applied science, social service, and writing. The information given covers nature of the work, training needed, personal characteristics essential to success, methods of entering the vocation, and opportunities for advancement.

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[3] Stanford University Bulletin, October, 1923. "Vocational Information."

NORTHWESTERN UNIVERSITY[4]

Vocational guidance and placement at Northwestern University is in charge of a Director of Personnel. The plan for personnel work includes selection, development, and placement of students. As outlined by the Director at the beginning of his work, ''development'' includes bringing to the student some knowledge of the various possibilities ahead of him, and some information regarding what is involved in these various possibilities. Information brought together from the professional schools and from presidents and managers of big business concerns is made available to the students by lectures and in other ways. Minimal qualifications required and the additional qualifications desired are set forth in terms of (1) physical requirements, (2) education, (3) special training, (4) experience, (5) technical skill, (6) personal qualities, etc. The duties, responsibilities, usual hours of work, rate of pay, and natural opportunities for advancement are also presented.

In addition to providing students with descriptions of occupations, the Personnel Bureau will ''endeavor to show each student a picture of himself.'' ''We shall go into some detail in accumulating facts concerning his history up to the time he enters college. We shall summarize his scholastic marks in his various courses in college. We shall record his test results. We shall request the faculty members, who know him, to rate him in other than scholastic qualities. The student will also be requested to give us, as references, the names of three classmates from whom we shall secure ratings in these same qualities. We shall request him to give us a distribution of how he is spending his time. We shall record his activities outside of the classrooms, together with honors received and other miscellaneous facts that will help us to know his possibilities, his interests, and his all-round development as a man. With this information at hand, we shall discuss with him his record and any possible relationships between his record and his vocational preferences.''

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[4] L. B. Hopkins, ''Personnel work at Northwestern.'' *Jour. of Personnel Research,* October-November, 1922.

CHAPTER VIII

OBJECTIVE MEASUREMENTS IN EDUCATIONAL AND VOCATIONAL GUIDANCE

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It is the aim in this brief presentation to select certain data which deal with measurement in education and particularly with measurement in the field of vocational guidance. Such a wealth of material on measurement is now available that a complete review of it is both unnecessary and impracticable. Vocational guidance, in evaluating the ultimate product of education in terms of social welfare and industrial efficiency, finds its problems closely bound up with many other significant phases of education. Therefore, no apology is offered, if certain cognate topics of education are treated in order to give a more complete and worthy setting for the consideration of vocational guidance.

ORIENTATION IN EDUCATIONAL GUIDANCE

It would be quite difficult, if not impossible, to initiate a new movement in education and expect to limit its application to that particular field alone. The forces which mould our educational processes are not functioning as isolated factors. They act in combination. It has frequently happened that practises in education have initiated changes so radical and so remote from their source that their original sponsors are unable to control the flood gates they have unexpectedly and unwittingly opened. Therefore, the writer feels a certain responsibility in dealing with educational and vocational guidance to make note of some of the other aspects of education which will also be affected.

Proper vocational placement implies proper vocational education. Proper vocational education implies wise educational guidance. Guidance in its larger meaning is finally based upon specific training in courses of study, upon knowledge of the pupil's ability, upon the adequate training of teachers, and in fact upon the entire host of factors which constitute modern education. More specifically, it may be noted that vocational guidance is concerned with the problem that arises when literally thousands of pupils are being dropped from school registers annually without adequate vocational training. It is beginning to be known that limitations of pupils' mental ability, poorly motivated teaching, and too stringent and arbitrary standards of promotion are more than incidental causes for this elimination. The traditional attitude—that the educational opportunity is there and that pupils may take it or leave it—can hardly be maintained any longer. Greater educational efficiency is the universal demand. When it is really known that large numbers of pupils are educational problems, the school must revise its instruction to meet practical needs. In this manner the pupil, rather than the course of study, moves into the focus of attention. Vocational education, in its broadest sense, is forcing the adaptation of training to the needs of individual pupils.

As vocational education begins to get under way, it finds new and better types of school buildings suited to the newer education. It discovers teachers in the field better trained and conscious of newer objectives. It finds society demanding more efficient preparation of pupils for effective social and industrial efficiency. It finds instruction being measured carefully by finely calibrated educational tests. It finds a technique of intelligence testing going forward in evaluating the raw product with which it is to work. In short, the tools of a scientific education are at hand. Optimal results will follow in vocational guidance only when these aids are fully utilized. The vocational guidance worker finds his activities and coming favorably timed. But this coincidence carries with it greater responsibility for efficient results.

The writer, in presenting measurement in educational and in vocational guidance, has limited his discussion chiefly to the field of mental measurement for three reasons: (1) He believes that the problems arising from differences in intelligence are closely related to problems of guidance; (2) He considers that the technique and methods of mental examination can be used successfully in the field of vocational and aptitudes tests; (3) He is better acquainted with this particular field of education. The discussion which follows will be grouped around the mental differences in children and in adults, and the significance of these differences for education and for industry. Brief mention of factors other than intelligence will be made. Finally, methods of presenting results and the function of suitable records will be considered.

MENTAL DIFFERENCES IN CHILDREN

The use of standardized intelligence examinations dates back less than twenty years to the appearance of Binet's first scale in 1905. In less than two decades the movement has developed rapidly, until to-day it is well established as an exact science. With the growth of testing have come statements that mental differences between individuals are tremendous. This discussion will be limited to the actual differences which are known to exist.

The extreme differences mentally between the idiot and the genius have been recognized from early times by all classes of people. The more subtle differences, however, between the dull and the average mind, or the average and the bright, have often passed unnoticed. The mental-age differences, by years of chronological or actual age, between those who are barely above the level of the feeble-minded and those who are just short of very superior in intelligence are shown in Table I. The approximate percents of children falling within each age group are suggested by Terman,[1] and are based upon the distribution of intelligence quotients of 1,000 unselected children. Terman states that approximately 20 percent of all children have intelligence quotients ranging from 70 to 90, 60 percent from 90 to 110, and 20 percent from 110 to 130. It may be noted that the three groups—the dull, the average, and the bright—corresponding to the intelligence quotients just listed, differ markedly in mental age from early childhood and that the gap becomes wider as they advance toward maturity. For example, it may be noted from the first line of Table I that the pupils who are six chronologically range in mental age from 4 years and

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[1] L. M. Terman, *The Measurement of Intelligence.* Boston, 1918.

2 months to 7 years and 10 months, or three years and eight months. While this illustration represents an extreme condition, nevertheless the differences between the average of the dull and the average of the bright in this particular year are at least two years of mental age.

TABLE I.—MENTAL-AGE DIFFERENCES, BY YEARS

Chronological Age	Dull, 20 Percent	Average, 60 Percent	Bright, 20 Percent	
	I. Q. 70	90	110	130
6-0	4- 2	5- 5	6- 7	7-10
7-0	4-11	6- 4	7- 8	9- 1
8-0	5- 7	7- 2	8-10	10- 5
9-0	6- 4	8- 1	9-11	11- 8
10-0	7- 0	9- 0	11- 0	13- 0
11-0	7- 8	9-11	12- 1	14- 4
12-0	8- 5	10-10	13- 2	15- 7
13-0	9- 1	11- 8	14- 4	16-11
14-0	9-10	12- 7	15- 5	18- 2
15-0	10- 6	13- 6	16- 6	19- 6
16-0	11- 2	14- 5	17- 7	20-10

By the time these pupils have reached the age of ten years, the mental-age range has increased to fully six years, and by the age of fourteen to eight years and four months. Although relatively few examinations by the individual Stanford-Binet have been carried out upon large numbers of unselected pupils, the scores of pupils upon group intelligence tests for thousands of cases bear out the general trend of differences suggested in Table I.[2]

MENTAL DIFFERENCES IN ADULTS

We have learned more about mental difference in children than in adults primarily because children have been the subject of experimentation in the schools of the country. The one chief exception to this rule was the application of intelligence tests to about 1,700,000 men in the United States Army during the late war. The purpose of the examination was to assist in more homogeneous classification of soldiers and the proper conservation of talent. The examination principally employed for this study was the well-known Army Alpha test. The maximal score on the Alpha test is 212 points. Enough cases were examined by the individual Binet examination to furnish some mental-age equivalents for Alpha scores. The results of the army testing are shown in Table II.

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[2] The writer is conscious of the discussion which has arisen over the point at which mental age appears to cease development, but he feels that the general tendency of Table I is of more importance than the exact limits, which are certain to be settled later on by extensive experimentation.

TABLE II.—RESULTS OF THE ARMY ALPHA TEST (1,700,000 RECRUITS)[3]

Score	Rating	Mental Age in Years	Percent	Description
135–212	A	18.0–19.5	4.1	Very Superior
105–134	B	16.5–17.9	8.0	Superior
75–104	C+	15.0–16.4	15.2	High Average
45– 74	C	13.0–14.9	25.0	Average
25– 44	C—	11.0–12.9	23.8	Low Average
15– 24	D	9.5–10.9	17.0	Inferior
0– 14	D—	0.0– 9.4	7.1	Very Inferior

The data of Table II tend to confirm the general limits of intelligence suggested in Table I. In fact, the mental-age limits of the lower 24 percent of the adult population indicated by ratings of D and D— are fully as low as the limits of the thirteen-year-old group and are much lower than the limits of the dull group at sixteen years chronologically in Table I. While the writer recognizes that some controversy has arisen over the validity of the Army Alpha scale as a measure of general intelligence and over the validity of the United States Army as a representative sample of the adult population, nevertheless he firmly believes that in the main the mental limits in Tables I and II approximate the actual conditions. The significance of mental differences in adults with respect to the problems of educational and vocational guidance will be discussed later under a different topic.

MENTAL DIFFERENCES AND EDUCATION

It has been generally recognized that the feeble-minded are so deficient in intelligence as to be unable to master the traditional courses of study in our elementary or high schools. It has also been known that exceptionally bright pupils can do more than the usual amount of work. Reduced to more exact terms, these statements mean that the educational training which a pupil is able to assimilate is dependent upon his mental development. In short, educational progress is determined in large part by mental age. Studies by Terman and others point to the fact that until a pupil's mental age is above six years he cannot do the traditional first-grade work satisfactorily. In like manner his mental age must equal his annual development of chronological age or he drops behind and becomes educationally retarded. Conditions in our schools with respect to retardation and elimination have been studied ever since the appearance of Ayres' *Laggards in Our Schools,* in 1909. Irregular attendance, hypertrophied tonsils and myopic optics were cited as the chief causes of pupil failures, which amounted to as many as twenty or thirty percent annually. The drive for the improvement of these factors has been very much worth while, but it has not much altered the original condition because that is really dependent upon differences in mental ability. By referring to Table I again it will be noted that fully twenty percent of the pupils who are six years of age chronologically are less than five years in mental age and therefore unable to master the traditional first-grade work. If we merely allowed all pupils to try the usual course, we would expect the bright group at the age of fourteen to be graduating from the high school by virtue of their superior ability, the average group would be in the ninth grade, while the dull group of the same age would be scarcely above the sixth grade and would be eliminated from school through release of compulsory statutes before they reached the junior high school. If this program should be allowed to carry itself out automatically, the dull pupils would spend two or more years for completing the first grade and approximately two years for each of the subsequent grades. Quite aside from the discouragement which results from such practices, this group would never reach the grades where it is feasible to offer vocational guidance. The solution of the difficulty lies in the adaptation of the courses of study to the ability of pupils rather than in setting up a uniform standard for all pupils which is not adapted to their needs. This program calls for simplified courses of study which will be fitted to the dull group comprising about one-fifth or one-fourth of all pupils, and an enriched course which will challenge the interests of the bright group. In this manner practically all pupils will progress regularly and feel a satisfaction in doing well, work which is suited to their needs and aptitudes. This issue must be squarely met. Merely retarding or accelerating pupils to fit their mental age to the old type of course is not sufficient.

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[3] Clarence S. Yoakum and Robert M. Yerkes. *Army Mental Tests.* New York, 1920.

This program calls for educational guidance of the first order. The discovery of the abilities of pupils and the recognition of their traits other than intelligence must be undertaken. Psychological insight and training must be called into play in determining how the mind of the dull or of the bright child works. It will be found that the dull child is apt to be poor in observation or perception and not even to notice the obvious labels, such as ''door,'' placed on the proper objects to assist him in learning. He is apt to have a short memory span and therefore he does not get the entire impression nor retain short units of it except through continuous drill. He has limited powers of judgment and cannot manage his usual affairs with the prudence expected of him. When these traits are interpreted in terms of instructional needs, we find that in such tool subjects as handwriting dull pupils adapt themselves to drill and repetition which are necessary to fix the impressions of the letters and to afford practise in muscular co-ordination. The bright child needs less training in these factors and takes little interest in handwriting unless it has a subject matter which changes continually. As a result of his general incapacities, the dull pupil falls heir to all manner of educational errors, such as writing the digits reversed or ''mirror-writing'' or multiplying partial products in exercises in multiplication. If we continue, through lack of proper educational guidance and faulty instruction, to foster such defects, the dull pupil goes out from school to an uncertain vocational career with a veritable bundle of unfortunate errors for which he is little to blame.

The schools must proceed intelligently in educational guidance. They must take into account the conditions which are being pointed to them. They must recognize that the one-course-for-all plan never has been effective and probably never will be effective. They must take seriously the statement of mental differences such as is shown in Table I. Finally, they must take into account the psychological problem involving the innate differences in mental make-up evidenced by dull and by bright pupils.

MENTAL DIFFERENCES AND INDUSTRY

We have already shown in Table II that the adult population tends to carry up from youth its differences in mental ability. These differences are not lost in the shuffle of industry. Industry, as well as the school, makes demands upon intelligence. Some light is thrown upon this relationship in Table III.[4] In this instance, again the data are drawn from the army test results, by occupations. Table III shows that unskilled labor as a group makes a median score of 35 points on the Army Alpha test and that the middle fifty percent of that group range in score from 21 to 63 points. In sharp contrast to this level it should be noted that engineer officers have a median score of 157, with an interquartile range from 134 to 184 points. From this table it is strikingly evident that intelligence is a selective factor in industry.

Although there is a marked tendency to a positive relationship between industrial trades or professions and intelligence, the conditions within any particular trade have caused no little confusion as to the value of the intelligence test as a selective factor for that particular group. The situation can probably be explained in the following manner. As an example, let us consider the range of the middle 50 percent of telephone operators, which is from 58 to 99 points on the Alpha scale. This range is as low as the average score for butchers and as high as the average score for bookkeepers. The telephone operator who barely qualifies in intelligence with a score of 58 is probably conscious that she is competing in a class above her level of ability, so she applies herself very diligently to maintain her position. The operator who stands at the upper end of the scale at 99 points feels that she is above the average of the group and does not need to exert herself to maintain her standing.

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[4] Clarence S. Yoakum and Robert M. Yerkes, *Ibid.*

Table III.—Occupational Inelligence Levels, Based on 36,500 Men in the United States Army, on the Alpha Scale

Occupation	Median Score	Range Mid 50 Percent
Laborers (Unskilled)	35	21 to 63
Semi-skilled Labor—		
Cobblers	39	23 to 67
Teamsters	41	23 to 68
Farm workers	42	24 to 70
Barbers	43	22 to 70
Horse-shoers	44	25 to 70
Skilled Labor—		
R. R. shop mechanics	45	26 to 83
Bricklayers	48	23 to 81
Cooks	49	28 to 79
Bakers	53	35 to 83
Painters	53	31 to 79
Blacksmiths	54	29 to 83
Bridge carpenters	55	27 to 84
General carpenters	57	33 to 85
Butchers	58	33 to 85
Locomotive enginemen	59	33 to 82
Machinists	61	33 to 86
R. R. conductors	62	40 to 84
Plumbers	62	38 to 87
Tool makers	63	41 to 88
Auto repairmen	63	41 to 89
Chauffeurs	63	38 to 90
Toolroom experts	64	43 to 88
Policemen-detectives	64	44 to 89
Auto assemblers	65	44 to 97
Ship carpenters	66	49 to 95
Business and Clerical—		
Telephone operators	70	58 to 99
Concrete construction foremen	75	48 to 116
Photographers	77	52 to 104
General electricians	82	58 to 110
Telegraphers	84	59 to 107
R. R. clerks	92	66 to 116
General clerks	96	74 to 123
Mechanical engineers	98	63 to 133
Bookkeepers	99	78 to 126
Dental officers	106	84 to 130
Mechanical draughtsmen	112	79 to 134
Stenographers	115	93 to 142
Accountants	117	101 to 145
Professional—		
Civil engineers	125	98 to 147
Medical officers	130	101 to 163
Army chaplains	150	109 to 173
Engineer officers	157	134 to 184

In fact, she may be preparing for some trade at a higher level and has only a temporary interest in telephone operating. The result is that the poorest in intelligence is fair or good as a telephone operator while the best in intelligence is fair or indifferent in her work. In this manner it may come about that success in telephone operating seems poorly related to intelligence. The test, however, has value in indicating about the level of intelligence that should expect to take up that particular occupation. Those who are in charge of the training should have fair warning that certain applicants will not remain long, whereas others who have fair ability can be expected to remain longer. If by chance a group who tested far below 58 points were to attempt telephone operating, their inferior product and poor ability would tend to show a positive relationship between intelligence and success in operating as demonstrated in the higher group who actually qualify. The determination of the lower and upper levels of intelligence necessary for any trade, profession or occupation and the prediction of permanency of service are doubtless the greatest services that will come out of intelligence testing in industry.

Experimental work on personnel with respect to intelligence has already produced some interesting results. In some lines of salesmanship, for example, where the demands upon intelligence are comparatively simple, there is little relationship between intelligence and success. In other lines, however, where the job demands complicated mental ability, success is highly correlated with intelligence. However, it is not always true that the positions which carry the highest responsibility are filled with those who possess the highest intelligence. In fact, the opposite has been shown to be true in some callings. Thurstone, for instance, reported that the mental test scores of lieutenants on the Detroit police force were lower than the scores of the regulars or privates. Careful analysis of the situation revealed the fact that the positions of the police force offered so little opportunity for advancement that the more capable left for better jobs and the less capable remained long enough to hold the better positions. The rank and file of the police force are recruited from a transient group who use it as a training ground for other trades and occupations. This explanation is not offered as an apology for the inadequacy of the intelligence test, but rather that the true significance of mental ability in a typical occupation might be illustrated. No doubt there are similar situations in many trades which further use of tests would bring to light.

As a result of observation, Bingham reports that individuals are frequently found who possess *too much* intelligence for the positions they hold. One might at first sight believe that the suggestion was not intended to be serious. Such, however, is not the case. The individual capable of abstract thinking finds his mental processes as surely at work at all times as he does the beating of his heart or the action of his lungs. If his position makes little demand upon his mental ability, he turns his attention to other fields. He may find no interest in his work from the mental point of view. Furthermore, he becomes dissatisfied and feels that he has not realized his true ambition. Or he may not be conscious of the real condition and believe that his chafing against restraint is a special trait of character of which he must remain justly proud. Such misdirected effort and energy, both wasteful to society and harmful to the individual, may well challenge those who are assuming the responsibility for proper educational and vocational guidance.

That marked differences exist between the intelligence level of unskilled labor and that of the higher professions cannot be denied. The lesser differences at the central levels of industry, complicated as they are by many other factors, such as interest, effort, and personality, will be more clearly revealed and understood when the instruments of measurement for such traits are ready for use. If we are not convinced of the relationship which exists between intelligence and levels of industrial occupation, it is because we have not the necessary information which makes these subtle differences self-evident. There is little doubt but that they exist.

OTHER FACTORS AFFECTING GUIDANCE

Because emphasis has been placed upon the importance of intelligence as a factor in educational guidance and vocational education, it should not be inferred that intelligence alone is to be considered.

As a matter of fact, the psychologist who is most closely acquainted with the field of mental testing finds himself continually trying to evaluate other factors which tend to produce discrepancies between expected and actual performance.

An excellent attempt at the measurement of such factors appears in the Will-Temperament tests by Dr. June Downey.[5] One of the features of these tests is the checking of that one of the pairs of traits which the individual believes more nearly describes himself. Traits such as "careful," "punctual," etc., are included in the list. The value of the test is not in the self-esteem which the individual holds for himself as shown on the traits he checks, but upon the amount of time he takes in making his decisions and the number of changes which he makes when asked to re-check them later a second time. At the first checking he is really being measured for speed of decision, and in the second instance he is tested for finality of judgment. The flexibility of his personality is measured further by various attempts at handwriting under irksome and troublesome conditions. These tests are based upon the hypothesis that certain characteristic traits will appear under the right amount of stress. Unless these attempts to test him are covered up under incidental activities, the person tested is apt to inhibit or conceal his true emotions. The success of this test and similar ones depends upon how well the true motives behind the tests can be concealed. The writer's experience with the Downey tests and similar tests, such as mirror-drawing, convince him that in most instances the desired effects can usually be attained.

Pupils frequently fail in school on account of anemia. They may fail because of poor attendance. They may fail because their unfortunate personality brings them into conflict with their classmates and brings official disapproval of the teachers for the same reason. Others are so self-willed and opinionated that they profit little from what the school does for them. The writer believes that the next few years will find completed tests for all manner of human deficiencies and delinquencies. With such analysis will come a new point of view upon the part of the school which will consider the diagnosis and correction of personal and social defects as important for child training as is the adjustment of courses of study to the abilities of pupils.

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[5] Published by the World Book Company, Yonkers, N. Y.

THE PRESENTATION OF RESULTS

In order that measurement in any field may be effective, methods of presenting the results, or scores, need consideration. Graphic methods of presentation appeal to the eye, and have generally proved very effective. The rapid development of a science in education has been due in part to presentation of tangible results of measurement so that they may be easily understood by the relatively untrained teacher and by the general public.

One needs merely to thumb the pages of any recent book on education to find not only graphs and tables of data, but often also a chapter on statistics. This tendency has grown so rapidly that there is a serious problem in choosing intelligently the type of graph or of table to present the results of measurement. We shall consider here only a few of the more recent devices used in test data. Among the first attempts was the expression of tendencies as an *average* score—the sum of the scores divided by the number of cases considered. The *median* is the typical midscore, or middle score, of a series arranged in order from highest to lowest. Both of these terms give no clue as to the amount of divergence by which any individual may depart from the average, the median, or other central tendency. In order to take this variability into account the *average deviation* and the *standard deviation* were devised. In the former case the result was obtained by dividing the sum of the amounts by which all cases differed from the median or average by the number of cases involved. In the latter case the procedure was essentially the same except that the differences were squared in order to give more weight to cases of extreme variation. While these measures of deviation have had considerable use, the derivation of results and even their interpretation are not generally understood.[6]

The method adopted to present results of the Binet examination is rather simple. The sum of scores, or credits, on this test is given as *mental age.* Thus a mental age of nine years indicates that a pupil performed as well as nine-year-old pupils ordinarily do. An *intelligence quotient* (I. Q.) may then be computed by finding the ratio of mental age to chronological age. Thus a pupil of ten years of age who measures eleven years in mental age has an intelligence quotient of 1.10 (written as I. Q. 110). In a similar manner, educational achievement has been tested by standardized educational measurements and expressed as *educational age.* The *educational quotient* is expressed in the same manner as the intelligence quotient. These terms have the great advantage of being easily understood and interpreted. Unless the standardization of the tests from which the results are derived is very carefully done, however, the results of examination tend to have a questionable meaning, and there is a tendency to assume that mental age is a very accurate and reliable measure. If properly safeguarded, mental age determined upon the Binet individual examination should remain as a court of last appeal in the diagnosis of difficult cases.

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[6] For a detailed account of statistical methods in education, see Part I, Chapter III of the *Twenty-first Yearbook* of this SOCIETY.—*Editor.*

The *percentile score* is coming to have rather common use. It is based on a simple principle, namely, the determination of the rank of a pupil with respect to one hundred unselected typical cases of his own age or grade, arranged in order of excellence. The fiftieth percentile score is the median score, while the seventy-fifth percentile score is exceeded by only the best one-fourth of the entire group. In this manner it may be stated that a pupil whose percentile score was among the lowest two percent of his group would be found exceedingly backward. The percentile plan has been sponsored chiefly by Rudolph Pintner[7] and by W. S. Miller[8] in his "Mental Ability" test. One of the possible defects of the percentile plan is lack of sufficient cases to make the result typical for the group. But this deficiency is also true of other types of distributions. A statement of the number of cases upon which the percentile scores have been computed assists in the reliability of the results. One of the chief advantages of the percentile plan is that the extent of overlapping of scores from one grade to the next or of one age of pupils to the next may be easily determined. For example, a score of 62 points on a group intelligence test when referred to the ninth-grade distribution is found to be at the fiftieth percentile, whereas if it is compared to the tenth-grade distribution it is found at the thirty-fifth percentile or possibly as low as the fifth percentile in the twelfth grade. When it is recalled that in many instances group intelligence tests are given to several successive grades with the same condition as to time limits and uniform rules of scoring, the amount of overlapping by grades is reliable and easily computed.

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[7] Rudolph Pintner, *The Mental Survey.* D. Appleton & Co., New York, 1918.
[8] See the *Twenty-first Yearbook* of this SOCIETY.

A similar plan with fewer steps is the decile plan. As the term suggests, the distribution is divided into ten parts instead of one hundred. A pupil whose score falls in the first decile stands among the lower ten percent of his group, while one who is in the tenth decile is among the best ten percent. Extensive use of the decile plan is made by the Institute of Educational Research at Teachers College, upon its ''Vocational Report'' card. The pupil receives a decile rating upon intelligence, attendance, achievement, mechanical or clerical aptitude, etc. In this manner a rather complete picture of the pupil's abilities and disabilities is furnished.

The letter-rating plan adopted for intelligence test scores in the United States Army is similar to the decile plan. It includes certain percentages of cases under the various letters. Thus a rating of ''A'' includes about 4 percent of the very best in intelligence, a rating of ''B'' includes the next 8 percent, etc., as reported in Table II. This plan has been adopted for reporting to schools results of group intelligence tests in many programs of testing. The actual percentages of the various groups falling within the letter ratings used in the Detroit public schools are as follows: ''A'', 8 percent; ''B'', 12 percent; ''C+'', 18 percent; ''C'', 24 percent; ''C—'', 18 percent; ''D'', 12 percent; and ''E'', 8 percent. This classification is based upon the distribution by chronological age regardless of grade placement. Thus all the nine-year-old pupils are placed in one letter distribution of ''A'', ''B'', etc., so that a very young pupil may be so far accelerated in his grade placement as to receive only fair school marks and yet be among the very brightest of his own age group who are one or more grades behind him in school. However, by referring his actual score to the distribution of pupils of his own age some adjustment may be made. It is hoped that eventually courses of study will be so arranged that all pupils will tend to progress through the grades year by year regularly and serious chronological age misplacement will tend to disappear. One of the chief advantages of the letter-rating plan is the simplicity of the principle involved. A pupil rated ''A'' stands among the highest 8 percent of his own age group in intelligence.

Other types of rating, known as the ''T'', ''G'', ''C'', ''B'', and ''F'' scores have been devised by McCall.[9] The ''T'' score is based upon the distribution of unselected twelve-year-old pupils. This arrangement is made with the knowledge that the very poorest of twelve-year-old pupils scarcely exceeds in score the average score of the six-year-old group, and the best twelve-year-old pupil approaches very closely the average score for pupils in the twelfth grade. The ''T'' score has as its unit of measurement one-tenth of the standard deviation of unselected twelve-year-old pupils. Pupils of all other ages are referred to this one scale which is intended to cover all ages. Thus a pupil with a ''T'' score of 50 on any test would equal the average of the twelve-year-old group and yet he might be only eight years of age. He would be quite superior to the eight-year-old group. A chief advantage of the ''T'' score is that it may be compared directly to the scores of pupils of any age. Since the scale covers a very long range of achievement its units of measure are not finely calibrated, and the differences between the performances of seven-year-old pupils are not well contrasted with each other. However, the simplicity of the principle probably outweighs its disadvantages and the idea of the ''T'' score is well conceived.

When it is desired that the ''T'' score indicate automatically the grade status attained, the ''T'' score is converted in a ''G'' score by means of a table provided. Thus a pupil may be rated as third grade in arithmetic ($Ga = 3.0$), half way through the second grade in intelligence ($Gi = 2.5$), and four-tenths of the way through the first grade in reading ($Gr = 0.4$).

Before the ''G'' scores may be used as a guide for the immediate classification, or re-classification of pupils into appropriate grades, account must be taken of the time of year when the test is given. By the addition or subtraction of certain constants, depending upon the month in which the test was given, ''G'' scores are converted into ''C'' scores, which indicate automatically the immediate proper classification. Thus Ga, Gi, and Gr may be converted into Ca, Ci, and Cr, respectively.

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[9] *How to Measure in Education.* New York, 1922.

The function of ''B'' scores is to measure brightness, to indicate the pupils' past rate of development, and to prophesy the future. Bi measures the same sort of thing as does the Intelligence Quotient. Bi, Ba, and Br are determined by the addition or subtraction of a constant depending on the age of the pupil to or from Ti, Ta, and Tr, respectively.

''G'' and ''C'' scores show how well the pupil is doing for the grade he is in. The ''B'' score shows how well he is doing relative to his age. There is needed another score that shows how well he is doing for his intelligence. It often happens that a pupil is exceeding what we expect of him in view of his grade and age and yet failing to achieve what we expect of him in view of his intelligence. The Fr score measures the extent to which the pupil's reading ability falls below or exceeds his intelligence. Fr is computed thus:

$$\text{Fr} = \text{Tr} - \text{Ti} + 50.$$

In like manner, ''F'' scores may be computed for arithmetic, spelling, or other subjects, or for all subjects combined.

It will be noted from the various types of ratings proposed that there is a tendency to express scores in very simple terms with which the teacher is familiar. There is also a tendency to express results in approximate, rather than in exact terms. Such approximation assumes that the teacher will still have a problem in studying her pupils and she will not rely merely upon the test results alone. She will be *assisted* by the various tests in making her final decisions more reliable.

Many types of graphs, or profiles, have been suggested so that the teacher may have a picture of test results. For example, suppose the percentile scores of a pupil in several tests have been determined. On a two-dimension graph the percentiles from one to one hundred may be laid off on the horizontal axis. On the vertical axis at convenient intervals the various tests may be placed. Suppose then that a pupil stands at the eighty-fifth percentile on a group intelligence test. A check, or appropriate marking, will be made at the point where the eighty-fifth percentile line and the group intelligence test line intersect. A check may be placed conveniently to show the fortieth percentile in spelling, etc. These points may then be simply connected by lines so that the teacher may determine at a glance in just what points the pupil in question is weak or strong. This plan may be used for all types of ratings and for any kind of trait which is susceptible of measurement. Final judgment on the use of scientific measurement in educational and vocational guidance will be based, not upon the volume of testing but upon the intelligence shown in presenting results of measurement in simple but effective form.

PERMANENT AND CUMULATIVE RECORDS

A hasty survey of the record cards adopted by many of the larger school systems quickly convinces us that the present methods of preserving records leave much to be desired. It is the writer's belief that the present systems of records are entirely inadequate and are seldom cumulative in character. This belief is substantiated wherever a thorough analysis of pupils has been undertaken. There should be available a complete family and personal history of the pupil which will sketch for us his home environment. All the chief activities in and out of school should be recorded as often as once a year. In addition to these events, significant incidents in the pupil's life should be noted. It is not easy to explain the present dearth of information upon record cards. It may possibly be due to a faulty conception that the teacher should receive new pupils every term with an absolutely clear record, and then discover their weaknesses anew. One wonders just how much difference it would make in the careers of pupils if teachers had advance information of idiosyncrasies and hints as to how to meet and cope with them. The old plan suggests a punitive, rather than a corrective type of instruction. Knowledge of defects and recognition of needs are part of modern educational philosophy. The lesson should be clear without further elaboration. We do not find out much about pupils in a day, nor in a week, nor sometimes in a year. Wise educational and vocational guidance must rest upon full knowledge of the pupil's past, his present, and his probable career. If guidance accomplished no more than the production of adequate records, its existence could be justified upon that count alone.

SUMMARY

Educational guidance and vocational guidance are appearing upon the educational field at a time when education itself is undergoing significant changes. The forces which are behind reforms in education, while motivated by single ideas, spread their influence far and wide into unsuspected channels. Guidance is based on a philosophy of greater industrial efficiency and happier social welfare. In order to attain this goal, guidance must go behind its final stages and demand education fitted and adapted to the needs and capacities of the pupils. It touches all the factors which constitute education.

In presenting measurement in educational and vocational guidance the writer has dealt in part with measurement in other fields and shown how the methods adopted there may be of value when taken on in the guidance program. These considerations were grouped around the topics which are recapitulated here:

1. Measurement has been attempted successfully in many educational activities, though only mental measurement has been stressed in this chapter. Mental measurement has an important message for guidance in that it is pointing the way to the classification of pupils for instructional purposes upon a more efficient basis. It selects pupils who are potentially dull and prescribes a type of curriculum which leads them toward life activities for which they are best fitted. Mental measuremcnt selects the bright pupil, suggests his program, and attempts to conserve his valuable talent for the highest types of production.

2. Mental measurement has been attempted in the fields of industry through examinations conducted in the United States Army and in industry since the war. The findings merely tend to verify the program of intelligence examination which have been undertaken with school children. The discussion has shown a general relationship existing between intelligence and occupations. It has pointed out how intelligence acts as a selective factor within any

occupation and the futility of expecting to train workers and hold them in a given trade unless their abilities are fairly well fitted to the task at hand.

3. The use of mental measurement in education has pointed the way to better methods of coping with the problems of correct guidance for all pupils. It has helped to define the significant factors which affect a pupil's progress. It will isolate and precipitate for study, traits of character manifested by certain types of pupils. In this manner social maladjustments which play havoc with human relationships will be reached and possibly cured.

4. The use of mental measurement in industry offers many puzzling and contradictory dilemmas, which can be explained satisfactorily only by taking into account all the factors which affect human behavior. In time we shall analyze these situations and offer solutions. In fact, we shall anticipate them and they will disappear before they arise. One of the most obvious values of the intelligence test is to show the upper and lower 'safety limits' by which a pupil may be guided into, or away from, a given occupation.

5. The measurement of traits of character, and the aptitudes for various occupations is following rapidly upon the intelligence test. When the effect of intelligence is recognized and accounted for, the importance of other traits can be more easily studied. When the measurement of these other factors has been made and results evaluated, some of the blame for failure will be taken from the shoulders of the intelligence test and placed where it properly belongs.

6. The success of measurement in educational and vocational guidance will depend in large part upon the manner in which it sells its wares to the individuals responsible for education in general and for guidance in particular. Various types of ratings and various methods of presenting data have been discussed. In general it may be said that there is a healthy tendency toward simplicity of terms and expressions of measurement which is very hopeful.

7. Finally, the entire movement for guidance should be based upon a full and comprehensive system of records which acquaint us thoroughly with the pupil from early childhood. We get a

picture of him growing up, of him progressing through his school work, of him trying out his talents in a few lines in which he is most likely to succeed. This aspect of education is certain to be so important in the future that a satisfactory chapter can scarcely be written upon it now in our present stage of ignorance and inadequacy.

Guidance has arrived on the scene at a favorable and opportune time. It can take advantage of many new movements which will assist it, and which it, in turn, can assist. Its ultimate success will depend upon the ability of its leaders to organize the various forces for a unified and intelligent program for every pupil.

CHAPTER IX

PREPARATION FOR THE WORK OF VOCATIONAL COUNSELLING

A. INTRODUCTORY

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The reader of the preceding chapters will have observed the great diversity of effort in the field of vocational guidance and the need for co-ordination among these several activities. No force is more important in the accomplishment of this co-ordination than the effective preparation of teachers and others to do work in the various departments of vocational guidance. If the children in school are to have adequate practical contacts with industrial, commercial, and professional enterprises, they must have opportunity to try samples of occupational life under the direction of versatile teachers. The ordinary teacher of manual training will need to get a new point of view, if he is to do this work effectively. Again, teachers of occupational information must be prepared. Next, ability to counsel children must be developed. Obviously, too, this counselling will require ability to test, or at least to use intelligently the results of tests administered by other persons. In the fourth place, teachers must be prepared to give the necessary guidance during the pursuit of vocational courses. Fifth, placements must be made; workers must be trained to know how to handle effectively the work of making the necessary contacts with industry and inducting children into positions suitable to them. Sixth, there must be developed ability to 'follow up,' to suggest advanced study, and to prepare and guide the worker in the long process of re-adjustment and promotion. Throughout all these steps, too, as represented by actual skills, there is needed a background of related knowledge in psychology, economics, sociology, education, and vocational education, and a broad but definite knowledge of the kinds of schools in which one is likely to work.

Further, social understanding of the philosophy of one's work cannot always be assumed and must at least be placed squarely before the student of vocational guidance in connection with the courses he pursues. Finally, the ability to do constructive research, and skill in dealing with school administrators and the public in connection with one's work are further necessities.

There are presented in this chapter descriptions of vocational training courses in four institutions: Columbia University, the University of Michigan, Harvard University and the University of Chicago. No claim is made that these present a comprehensive or accurate picture, but only that they seem to be the ones most available for our purposes. The third paper, prepared by the present writer, was written before he had read the other plans. There are, therefore, four independent accounts. It is interesting to compare them.

The reader will note, in the first place, the emphasis on actual practice in all four papers, and, again, the common difficulty expressed in providing this practice work. He will note also, as emphasized particularly in Professor Bonser's paper, the fact that the work of the counselor is hardly at this time a definite professional position. Indeed, just now there is call for some educational statesmanship in studying the problem suggested by Professor Bonser, namely, the work of deans of women, officers, vice-principals, and others, to determine just what, after all, is the center of these activities. One interested in educational and vocational guidance will probably believe that success in school progress is the center about which should be placed other forms of guidance, and that since this task of school progress is the common full-time job for students, so the common full-time job of the worker later—namely, his vocation—should be the center about which are grouped the guidance in other activities. Professor Bonser is quite right in saying that deans of women, as a class, have not yet recognized the possibilities in the vocational counselling phases of their work.

Professor Myers very directly points out the double task which a university teacher of vocational guidance has before him: first, to prepare the school principals and superintendents for understanding and fostering vocational guidance; and second, to train counsellors. Further cause of complexity is suggested by the whole problem of classifying students in schools. There are at the present time some high schools which turn over completely all problems of choice of studies, courses, testing, and other classification questions to the vocational counsellor for the school.

B. THE TRAINING OF VOCATIONAL COUNSELLORS AT TEACHERS COLLEGE, COLUMBIA UNIVERSITY

Frederick G. Bonser
Professor of Education, Teachers College, Columbia University

At Teachers College there are numerous courses which contribute to the preparation for vocational counselling in the high schools. However, there has not been developed what we call a "major" in this field—an organized group of studies designed specifically to prepare students for work as vocational counsellors. There have been very few demands for men and women to do this work alone. In most high schools the work has been done by one or more teachers who are released from one or more periods of teaching to give part time to counselling. The work has therefore usually been an adjunct to a teaching position rather than as an independent position in itself.

Teachers College has a considerable number of women students who are definitely preparing to become advisers of girls and women in high schools, normal schools, and colleges. The demand for these is increasing at a rapid rate. Vocational counselling is only one of the problems of the advisers of girls and women, but it is a very important phase of their work in high-school positions. Relative to its importance, it has not yet been given adequate attention.

Superintendents, principals of schools, and, also, directors of educational measurements and research are interested in the problems of counselling, although they find time for only the more general aspects of the problem rather than for details of technique. All general courses for these positions of administration, supervision, or research provide some opportunity for acquaintance with the problem through short unit courses or through a few hours devoted to the consideration of its present status, its literature, and the direction and tendencies of its development.

For those directly interested in preparation for the work, either in addition to teaching responsibilities or for full-time positions, courses are available which offer practically every phase of needed preparation, save only adequate practice in actually engaging in the counselling of students. As the work develops, it is expected that wider opportunities for practice will be provided by the co-operation of neighboring schools. Courses offered which embrace material directly representing the essential content of needed preparation include the following:

(1) The problems and methods of vocational guidance;
(2) Analyses of occupations to provide both vocational information and training in the methods of securing such information;
(3) Field studies and research in special phases of vocational education and guidance;
(4) Making and applying mental and vocational measurements and tests, and the treatment of results;
(5) The sociological and psychological foundations of vocational education and guidance;
(6) The theory and principles of vocational guidance;
(7) Principles of practical arts education;
(8) The education of women;
(9) Problems of advisers of girls and women.

In addition to these lines of work, there are numerous courses, both general and specialized, in economics, sociology, psychology, and education, all open to any student who is prepared to take them.

So much for the present situation at Teachers College. Speaking more generally, it may be pointed out that the needs of the students who are to be counselled, and the conditions under which and in relationship to which the counselling must be practiced to be effective determine, of course, the kinds and amount of preparation required of the counsellor. Since the problem is here considered in relationship to secondary schools as they are, it is important that the counsellor should understand well the organization and the possibilities of those schools in which he is to work. For counsellors in these schools a knowledge of the organization, courses, and methods of administration of courses and programs in both junior and senior divisions of the high school is quite essential. Familiarity also with community opportunities, both for training through special schools or by apprenticeship plans, and for work suited to various kinds of capacities and other personal qualities is necessary for practical efficiency. Preparation should provide training in quickly interpreting the conditions of the schools themselves, and in securing with little delay needed community information in detail.

Having these essential elements of knowledge of his schools and his community, the counsellor's direct work with students will require an efficiency in interpreting the school records of individual pupils, their capacities, and other personal qualities as revealed by tests and personal data, and by their economic and social backgrounds and outlooks. He will be required to resolve all of these factors into conclusions in which each element receives its appropriate consideration, and then offer advice which it seems reasonably probable that the student may be able to follow.

Such preparation involves not only specific information and training in these constituent activities, but also a working knowledge of a broad background of economics, sociology, and psychology. The position of the counsellor is one of far-reaching responsibility and one that requires breadth of vision, knowledge of conditions and people, and skill in the application of his knowledge to the widely differing needs of individual cases. While the counsellor may work in accordance with well-formulated general principles, every individual problem presents a combination of factors unique in one or more particulars.

At present, the position of counsellor is without standards, either in exact definition or function. Our endeavor shall be to take account of the many experimental attempts to develop the position, compare their methods and outcomes, and through an evaluation of the merits of the respective methods attempt to devise an organized body of principles and practice from the use of which measureably effective results may be depended upon. Together with this utilization of the experience of those attempting the work by various methods, we are establishing co-operative relationships with neighboring junior and senior high schools where experimental and practice work may be carried forward. From these sources and from the application of principles which fundamentally underlie the problem, we shall plan a specific array of courses by which the education and training of the counsellor can be accomplished. When we have reached a point at which we may say with confidence that one has been prepared for this work as adequately as we prepare school superintendents, high-school principals, elementary-school principals or supervisors, or directors of educational measurements, we shall offer a diploma for the position of vocational counsellor. For the worker of this kind in the high schools, in as much as the responsibility is for advice that is educational as well as vocational in many cases, it is quite probable that the title will be that of educational and vocational counsellor.

The time seems ripe for an integration of the successful trials and experiments made in various sections of the country during the past decade. From the experimental stage of the work, we look with confidence to the early emergence of a body of fundamental principles and practice which will serve as a guide to the preparation of counsellors with a minimum of waste and an increasing efficiency through the refinement and perfection of technique.

C. THE TRAINING OF VOCATIONAL COUNSELLORS AT THE UNIVERSITY OF MICHIGAN

George E. Myers
Professor of Vocational Education, School of Education,
University of Michigan

In discussing the question of training vocational counsellors it must be recognized that, while the demand for well prepared counsellors is increasing each year, at present the number of persons required for full-time counselling positions is not large. There is much popular interest in the subject, but school authorities have not yet provided for it extensively in school budgets. On the other hand, the need for acquainting superintendents of schools, principals of junior and senior high schools, high-school teachers, and others with the responsibility and opportunity of helping youth to make wise occupational choices is almost unlimited. We have, then, the double problem of acquainting a large number of people with the aims, the opportunities, and to some extent the methods, of vocational guidance, and of selecting and training intensively a small, but growing number of specialists who will devote their entire time to vocational counselling.

Our concern in this discussion is with the latter group, but it would be a mistake to lose sight of the fact that the success of this group will depend to a large degree upon the extent to which the former group develops a sympathetic and intelligent attitude towards vocational counselling. It would be a mistake, also, to lose sight of the fact that many high-school principals and teachers will continue to do valuable work in this field after the trained counsellor has become as much a part of the high-school organization as is the trained teacher of English or history.

The work done at the University of Michigan in training vocational counsellors divides itself readily into five parts: First, an introductory course or survey; second, a study of special problems; third, a combination of class work and field work in which information concerning occupations is gathered and prepared for use in counselling; fourth, seminar courses in which each student makes an investigation of some aspect of vocational guidance (sometimes two or three students work together on the study); and, fifth, related courses in economics, sociology, psychology, and education. To this list it is planned to add practice work in counselling under supervision and also the requirement that the student shall have had industrial or business experience.

The introductory course seeks to give to a considerable number, who will be responsible for high-school work, a general knowledge of the purposes, organization, and methods of a comprehensive guidance program. It serves, also, as a means of sorting out from this number the few who have the qualifications and the interest necessary for success as counsellors. Present methods of entering occupations, as shown by numerous studies of young workers, are considered. The social and economic waste involved is discussed. Society's responsibility in the matter, and the school's place in meeting this responsibility are next considered. Trial, or exploratory, courses, occupational information courses, individual counselling, placement, and 'follow-up' are given attention. The organization necessary for effective work, possible aid from other social agencies than the school, and the significance of intelligence and vocational tests for a guidance program also find a place in this course.

Following the introductory course, another course of equal length is offered which deals with particular problems of the counsellor. Some of these problems were considered briefly in the general course. The aim is to acquaint the student rather thoroughly with principles and methods affecting the more important questions involved in counselling, and with current practice in meeting these questions. Among the topics given considerable attention are: Obtaining and using worth-while data concerning occupations; the technique of the interview; using other social agencies than the school; interpreting and using results of general intelligence and other tests; purposes and methods of follow-up work.

The purposes of the combination of class work and field work in gathering and preparing information concerning particular occupations are to give the prospective counsellor contacts with employers and workers, to give him experience under supervision in analyzing occupations for counselling purposes and in writing up the results of his analysis, and to supply him with first-hand, up-to-date information concerning a limited number of occupations. No purely theoretical course on occupational information nor one based upon studies made by others can possibly take the place of this combination course. Every successful counsellor will find it necessary to study systematically the occupations of his own community and should be prepared to do this work. Some of the material worked out in the University of Michigan course will be found in "Opportunities and Requirements in Local Occupations," Parts 1, 2, and 3, published by the Board of Education of Detroit. When this material was prepared, the course was conducted by Mr. A. H. Edgerton, who was then chief of the vocational information and counselling division of the vocational bureau of the Detroit school system, and who was concerned with training a group of counsellors for the intermediate schools, high schools, continuation schools, and special classes of that city.

The seminar courses provide opportunity for advanced students to investigate special problems and try out special methods in vocational guidance. The problem of each student is determined by his particular interest. Reports of plans and of work done are submitted to the group by each member from time to time for criticism. Individual conferences between instructors and students are frequent. One of these investigations, "Occupations of Junior Workers in Detroit," a study of 1500 continuation-school boys and girls from the young workers point of view, by Alexander G. Crockett and Jennie M. Clow, has been published as a bulletin by the Vocational Education Department of the University.

Of course, each student preparing for the work of counsellor is expected to have a good general knowledge of economics and sociology, including such special courses as labor problems, employment management, and community problems. He is expected also to be sufficiently acquainted with general psychology, vocational psychology, educational psychology, and intelligence testing to be able to apply their principles when desirable, and to weigh intelligently their results in so far as these affect vocational counselling. Some training in the principles of education and in the problems of the high school and junior high school are likewise considered essential.

While the foregoing completes the present training program for counsellors at the University of Michigan, a plan is now under consideration for providing practice work in the University High School, which will open next September, and in city school systems of southeastern Michigan. Such practice work in counselling would be provided for on an apprentice basis, each student-counsellor serving in this capacity with a practical counsellor for a definite period of time. Also, the proposal is under consideration to require each would-be counsellor to have, before completing his training, at least three months' experience as a worker in industry or business.

D. THE TRAINING OF VOCATIONAL COUNSELLORS IN THE GRADUATE SCHOOL OF EDUCATION, HARVARD UNIVERSITY

JOHN M. BREWER
Associate Professor of Education and Director of the Bureau
of Vocational Guidance, Harvard University

The Graduate School of Education of Harvard University is a vocational school and our first consideration, therefore, is a survey of the needs of those who enroll in classes in vocational guidance. Two facts must be borne in mind: first, that over 80 percent of the full-time students in the School of Education are teachers of experience; and second, that many are definitely planning for promotion, so that knowledge of, and ability in, counselling is itself likely to be used as a stepping-stone to positions in college teaching or to work of an administrative character.

Records are available for 162 students of recent classes in the general course in "The Principles of Vocational Guidance," in which these students described their present work and their immediate objective as well as later goals. Sixty-two of the 162 have no immediate desire to change their work, while 100 have in mind promotion to various other positions. Following is a tabulation under the two heads:

	Number Having This Work as Present Job	Number Choosing This Work as Next Objective
Teachers in Schools	71	37
Vocational Counsellors (Including Personnel Workers)	10	34
School Psychologists (Including Directors)	4	8
Librarians	2	0
Students and Miscellaneous Other Occupations	18	0
Supervisors, Heads of Departments, Directors, Vice-Principals, etc.	21	16
Principals of Schools	18	33
Superintendents of Schools	6	23
College Teachers	12	11

It will be noted that those aiming to be counsellors and psychologists together total but 42, school and college teachers 48, and supervisors, principals, and superintendents 72.

The comprehensive survey in the first course is by no means "general" in the sense of indefinite. We hope that the applications to classroom and counselling procedure are specific in every lesson and on every point touched. This course seems to us to contain considerations which need study by all the groups represented in the figures above.

Class procedure involves chiefly lecturing, as we believe the lecture method is practicable for students experienced in the fields under discussion or in school work of various kinds. Lectures are subject to frequent interruption for purposes of question, disagreement, and discussion. Sometimes brief compact tests are given on the lectures and the reading. A definite attempt is made to check up the reading by means of questions. In all such matters of class management we believe that a university class needs the same careful attention as do classes of pupils in schools. Frequent reactions to the lectures and readings are required, in the shape or ten or more outside exercises, examined and revised enough to be fairly good in construction, and brief enough for the concise handling of a single problem. A mimeographed page listing the readings and other assignments is distributed, together with a seating list for identification and acquaintance. A syllabus, or outline, and certain other papers containing illustrative matter pertaining to the course are also distributed.

Advanced courses during the regular year are given as follows: First, there is a course in "Counselling and the Organization of Guidance." This course obviously should be organized in two parts. That seems impracticable at the present time. Logically, the organizers of vocational guidance work in schools need to know the problems of counselling, and counsellors need to know organization. At any rate, the members of this class are likely to be very much better selected than those of the class in Principles. For this reason it is recommended that the course in Principles be taken first, though this is not a required prerequisite. Second, we have a "Seminary in Vocational Guidance" for the study of individually selected problems, with class discussions on progress. About one-third of this class is likely to be engaged in writing doctors' theses, and another third or a half will be composed of part-time students who are carrying out a study in connection with their present work. During the year 1923-4 the class is studying the problem of measurement in educational and vocational guidance. Third, individual research without class meetings may be carried on by those who are competent.

There is also offered a course called "Education as Guidance," in which some of the lessons learned in vocational guidance are applied to school progress, home membership, citizenship, care of the person, leisure, ethical attitude, co-operation, etc.

In the Summer School additional courses are likely to be offered in "Psychological Methods in Vocational Guidance" and in "Occupational Information, Research, and Surveys."

Co-operation with other fields of work in the school is common, and special lectures on guidance are given in the course for the training of school superintendents. An attempt is made to treat vocational guidance as the logical method of articulation between vocational education and general education.

In connection with all classes an attempt is made to furnish some sort of a balance among skills in, technical knowledge of, and social understanding of the work of vocational guidance. Naturally, every college class leans toward the last two named, but wherever it is practicable, students are given some sort of trial, or brief experience, in the various fields of vocational guidance activity. In addition to visits to industrial and commercial establishments, actual cases are brought into class, and students are assigned to the task of conducting lessons in occupational information, in counselling individuals, and in other skills. The work of placement is largely neglected, though beginnings have been made in this direction. The last class in counselling studied eight cases of individuals needing help. Several important constructive pieces of work were done by the members of this class. One of these involved a reconciliation at home and additional education for a talented boy who had run away and been brought back, supposedly to leave school and go to work.

In the files of the Bureau of Vocational Guidance at Harvard University it appears that some thirty individuals and as many institutions have offered courses in Vocational Guidance. No doubt there are fully thirty other places about which we do not know. The importance of co-ordinating the various efforts in this direction is evident.

E. THE TRAINING OF VOCATIONAL COUNSELLORS AT THE UNIVERSITY OF CHICAGO

EMERY T. FILBEY
Associate Professor of Industrial Education, The University of Chicago

At the University of Chicago work is offered in guidance and personnel training through a number of courses dealing with the general background of educational principles and practice, the special training of workers for guidance and placement, and the pursuit of research work in the guidance and employment field.

A course in ''Occupational Information, Guidance, and Placement'' is intended as a survey type of treatment for school officers generally. In this course we attempt to present the problems in such a way as to show teachers, principals, superintendents, supervisors, and others their peculiar responsibility for personnel service. In a course in ''Occupational Counselling,'' there is an attempt to assist those who desire to devote special attention to the advisement or placement side of the work, to evaluate occupational survey, or informational material. There is also an attempt to train in a very limited way in the technique of interviewing and group discussion of personnel matters.

In a course in ''Research Problems in Occupational Information, Guidance, and Placement,'' we attempt to afford an opportunity for individual, and for the most part, independent research in the field of personnel service. While this course requires regular class meetings and formal discussion of a number of problems before the entire group, there is really little excuse for such administration, and it is evident that the group would profit equally if the course were to be administered on the seminar plan.

While we are interested in providing for the advanced training of a number of specialists for service in the various branches of personnel work, we are equally concerned with the problem of impressing the rank and file of the school teaching and administrative force with the need of more complete service in matters bearing upon personal adjustment, both in school and out in employment. After all, the service of specialists can never be effective until our teachers and administrators generally accept the program, and accept, along with the program, some responsibility for its effective administration at the point where they come in contact with the young people concerned.

The courses I have indicated represent the work we attempt on the University campus. In addition, the course on ''Occupational Information, Guidance, and Placement'' is offered by correspondence. Each year we reach in this fashion probably twenty-five to thirty mature teachers or administrative officers in public schools, normal schools, and colleges. The materials prepared for correspondence study are now being extended, and it is expected that a printed volume will soon make possible more effective treatment of this matter for non-resident students. This course and that in ''Occupational Counselling'' are also offered through University College for the benefit of students in and around Chicago. One of these courses offered in Joliet this autumn has an enrollment of seventy students, mostly teachers from the Joliet High School and Junior College. As the study progresses they are canvassing the possibility and desirability for rather complete reorganization of the personnel work of the entire school. The course is conducted on the graduate level, and more than half of the students enrolled have their masters' degrees. This work represents what, in my estimation, must be done in a number of centers before we progress much with the major problem ahead. We have a number of calls for similar service, but staff limitations interfere with immediate development.

We have as yet done little to bring together the various departments in the University that deal directly with this problem of personnel. The future holds an opportunity to bring together courses now scheduled in various departments, such as those in certain phases of administration and measurements in education, personnel courses from the School of Commerce, employment psychology, and tests for special ability from the Department of Psychology, case work from the Department of Social Service Administration, and other similar independent units of work from the various divisions of the University. These, knitted together and slightly modified, afford the basis for the kind of specialized training needed by many of our advanced students. Coupled to this kind of training must be the practice now going forward in our laboratory schools and through the offices having to do with the student body generally.

On the whole, there is most encouraging interest on the part of school representatives in this matter of personnel administration in schools, and if the larger institutions go forward with provision for the right kind of leadership, the movement will make rapid progress. This progress should be not alone in terms of training or providing for an over-large number of highly specialized workers, but it should be progress in terms of general recognition on the part of all school officers of the importance and necessity for more adequate treatment of things personal and human, as well as of matters largely intellectual.

CHAPTER X

A SELECTED BIBLIOGRAPHY OF EDUCATIONAL AND VOCATIONAL GUIDANCE

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Publishers' Directory

Abingdon—Abingdon Press, New York City.
Allyn—Allyn and Bacon, Boston, Mass.
Am. Book—American Book Co., 100 Washington Square, New York City.
Am. School—American School, Chicago, Ill.
Am. Tech.—American Technical Society, Drexel and 58th Ave., Chicago, Ill.
Appleton—D. Appleton and Co., 29-35 W. 32nd St., New York City.
Association—Association Press, 347 Madison Ave., New York City.
Atlantic—The Atlantic Monthly Press, Boston, Mass.
Badger—Richard G. Badger, Boston, Mass.
Barnes—A. S. Barnes Co., New York City.
Blakiston—F. Blakiston's Son and Co., Philadelphia, Pa.
Bobbs-Merrill—Bobbs-Merrill Co., University Square, Indianapolis, Ind.
Bruce—Bruce Publishing Company, Milwaukee, Wis.
B. V. G.—Bureau of Vocational Guidance, Harvard University.
Century—Century Co., 353 4th Avenue, New York City.
Cleveland—Cleveland Education Survey, Cleveland Foundation.
Crowell—Thomas Y. Crowell Co., New York City.
Doubleday—Doubleday, Page and Co., Garden City, New York.
Forbes—Forbes and Co., 443 S. Dearborn St., Chicago, Ill.
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Ginn—Ginn and Co., Boston, Mass.
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Jones—Guy M. Jones Co., Indianapolis, Ind.
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Little—Little, Brown and Co., Boston, Mass.
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An asterick indicates that the book has been found particularly useful.

One (1) indicates that the book is suitable for the class in occupations.)

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SECTION II

VOCATIONAL EDUCATION FOR THE INDUSTRIES

CHAPTER I

OUTSTANDING TENDENCIES IN INDUSTRIAL AND PART-TIME EDUCATION PROGRAMS IN ONE HUNDRED FORTY-THREE CITIES

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Much has been said and written concerning the place of vocational education in democratic public school systems. Both constructive and destructive criticisms have been repeatedly directed toward all vocational education activities, and especially those which fail to reflect the important changes, demands, and interests of representative pursuits in occupational life. The rapid developments in this recently organized movement for vocational instruction throughout the country and the corresponding diversity of practices in the various local communities have necessarily resulted in a considerable amount of confusion and misunderstanding.

Despite these challenging facts, increasing numbers of the most progressive school organizations surveyed in 143 cities are attempting to meet current and changing demands for purposeful instruction and systematic advisement. To be sure, these schools usually have administrators and teachers who possess insight and vision sufficient to provide adequate instructional and guidance facilities, both as a definite preparation for profitable employment and for general educational values. In both connections, it is encouraging to note that marked increases in interest and in ambition, and likewise in school attendance, usually follow the inauguration or reorganization of courses of study which actually attempt to meet the needs and capacities of the learners in question. As will be indicated, many of these school systems have realized notable improvements by being less occupied with their earlier attempts to justify established courses of study and arbitrary methods of procedure, and by becoming more alive to the urgent need for extending school service.

DIFFERENT INTERPRETATIONS OF VOCATIONAL EDUCATION

As would be expected, honest differences of opinion as to claim and interpretation have frequently existed among those who are concerned with the important distinctions, meanings, relationships, and functions of vocational education. Debatable issues have been evident to close observers for a number of years, and especially since February, 1917, when certain formulated standards as to general procedure, time, equipment, and qualifications of teachers were established through the enactment of the Smith-Hughes vocational education law. By means of this law a part of the expenses incurred for specified vocational purposes may be reimbursed from Federal funds through the state departments by direction of the Federal Board for Vocational Education. Perhaps much of the misapprehension as to objectives, means, and methods may be attributed to premature interpretations and decisions which have often been based upon erroneous or superficial data.

A notable example of such misinterpretation is to be found in this survey of 143 large and small cities. Those cities having the most successful programs have usually taken the attitude that this Federal law provides a desirable means of stimulation and assistance in developing some adequate facilities to meet their local problems for providing vocational education. Nevertheless, a few communities have decried the restrictions of this law, which they have regarded as an arbitrary means of controlling the local programs. This claim has sometimes resulted from a disinclination on the part of some school representatives to accept entirely the philosophy of certain educational leaders and specialists who would sharply differentiate all problems of vocational education from their alleged relationships with other divisions of education.

Several school officials continue to insist that serious conflicts exist between general education and the controlling objectives and policies for vocational education. In a few cases it is reported that boards of education are little concerned with the immediate problems of preparing more efficient workers in specific occupations.

On the other hand, a few enthusiasts report that they regard the satisfactory solution of problems in vocational education as an absolute and independent preparation for complete living. But, with the few exceptions which will be listed later in these reports, the representatives of the city systems investigated in person, by questionnaire, and by letter do not indulge in either of these extreme points of view. In the main, their educational philosophies assume that the future wage-earner is a consumer and a citizen, as well as a producer; that a program which neglects to help all individuals to consume intelligently and utilize the hours of leisure wisely is decidedly undemocratic. In other words, most school officials are convinced that their opportunities and duties rest in the problem of helping boys and girls to meet new and changing demands for effective service as members of families and of civic and vocational groups. They state, with varying degrees of emphasis, that their respective school systems are seriously endeavoring to use all available resources in preparing children to make proper choices and adjustments, and to help determine their own future careers. To be more exact, over eighty percent of the school systems investigated show evidences that they are providing activities which aim (1) to develop the general capacities as well as specialized interests and aptitudes of the pupil and (2) to prepare him for the varied demands which the future is going to make upon him, in so far as these can be ascertained. However, as will be indicated later, there is a decided range of opinion as to how these general objectives may be accomplished most satisfactorily.

NOTEWORTHY IMPROVEMENTS IN MANY VOCATIONAL COURSES

In a large number of the specific vocational courses investigated it was found that the clear-cut needs of those desirous of preparing themselves for direct entrance into definite occupational pursuits, or of continuing their supplementary training, have resulted in noteworthy improvements. The most important of these closely related instructional provisions, especially in those schools where diagnosis in the form of analysis and investigation has received adequate attention, may be stated briefly as follows:

1. Increased emphasis upon determining well-defined needs and objectives for offering the various units in question;

2. Practical analysis[1] for selecting the particular skills and knowledge which might well be acquired in order to meet these needs and objectives;

3. Greater interest in evaluating these teachable elements for the purpose of weighing values as to the general order and time when each unit might be most effectively taught;

4. More care in planning each unit in terms of the specific needs and standards for the class, group, and individual, and in relation to the other units of instruction;

5. Better procedure for choosing the most suitable methods and devices for presenting the selected units in keeping with the above considerations;

6. Improved attitude toward checking up and testing[2] the different persons in training to ascertain how fully the instruction has succeeded in realizing the subjective and objective standards.

With comparatively few exceptions, those directly responsible for this specialized instruction have been agreed for some time that their respective trainees must be aided in acquiring a sufficient degree of manipulative skill and related knowledge to increase their technical efficiency. Perhaps to a somewhat less degree, it is being realized, more and more, that *resulting powers in skills, attitude, and appreciations are acquired most advantageously when opportunity is provided for participation in appropriate thought-provoking situations which give due consideration to desirable initiative and self-adjustment in the learners' chosen vocations.*

Then, too, employers are becoming vitally concerned with the perplexing problems which confront them in selecting, 'breaking in,' and upgrading their employees. On the other hand, there are many examples of the increased realization on the part of employers of the urgent need for education, advisement, and coöperation in order to eliminate unnecessary waste in excessive turnover and in other undesirable methods which are inevitable results of their hit-and-miss systems of 'hiring and firing.' In other words, more and more *employers are coming to realize that many of their immediate problems pertaining to human relationships are inherently tied up with the instructional and guidance provisions which are being developed in progressive public school systems.*

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[1] See Chapter III for detailed statements of different methods used.

[2] See Chapter VIII for a discussion of measurements in industrial education.

INDUSTRIAL EMPHASIS AND RELATIONSHIPS IN THREE HUNDRED THREE JUNIOR HIGH SCHOOLS[3]

During the past few years marked reorganization and development have been noted in intermediate and junior high schools throughout the United States. As a result of this growth, decided changes are found in the purpose, content, and method of the activities now provided both in industrial courses as a means of general education and in classes for limited industrial education. Table I shows that only six of the 303 intermediate and junior high schools investigated report that they consider this limited vocational emphasis of first importance during the junior secondary period. Nevertheless, Pittsburgh, Pennsylvania; Rochester, New York; Detroit, Michigan; and several other cities have provided the so-called industrial curriculum apart from the 'exploration' or 'try-out' courses, in order to give boys *preliminary* training in a few of the important trades. This curriculum, which conforms to the requirements necessary for receiving federal and state aid under the Smith-Hughes law, is usually designed for two main purposes:

1. To meet the needs of boys with mechanical ability who might be better able to profit by industrial work than by the regular school program.
2. To assist those who for various reasons are to remain only a short time in school and who need short, intensive courses of training before entering industry.

Although the practices differ somewhat in these cities, provisions are most often made for machine shop practice, electrical work, automobile repair and garage work, pattern making, printing, and the like. It is reported that these courses are intended to give preliminary training for entrance to the industries, *i. e.*, for immediate jobs as apprentices or 'helpers.' In Detroit, for ex-

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[3] See Chapter I in Section I of this *Yearbook* for emphasis upon guidance activities in 379 junior secondary schools.

TABLE I.—MAIN REASON GIVEN FOR OFFERING INDUSTRIAL ACTIVITIES AND RELATED STUDIES IN EACH OF 303 INTERMEDIATE AND JUNIOR-HIGH SCHOOLS

Chief Emphasis and Claims	Schools	
	Number	Percent
I. *Contributing to the general experience, all-round development, and industrial intelligence* 1. Understanding and appreciating economic production in some form; 2. Gaining respectful attitudes toward the various workers and their work; 3. Having ability to judge industrial products and do simple repair and construction work, etc.	118	39
II. *Aiding in the intelligent selection of industrial occupations without encouraging early choices* 1. Trying-out individual inclinations, interests, and capacities for industrial pursuits, through typical experiences; 2. Making reliable studies of the conditions, demands, and opportunities in related occupations, etc.	101	33
III. *Enriching the school experience of the pupils through concrete situations* 1. Having science, mathematics, and other subjects, profit from a better understanding of materials, processes, tools and machines; 2. Providing for the individual needs of pupils who would not remain for academic education alone; 3. Helping pupils more wisely to choose future courses in secondary and higher education, etc.	78	26
IV. *Preparing for entrance into industrial vocations* 1. Extending the try-out activity to meet the preparatory-vocational needs of pupils who find it necessary to leave school with a minimum of preparation; 2. Offering greater opportunities for commercial experiences in shopwork by co-operating with outside productive plants during the ninth year, etc.	6	2

ample, specialized work in several trades is offered to the extent of fifteen 60-minute periods a week during one year, with a possible maximum of two years for certain individual students.

In general, the students who are interested in these specialized courses are expected and sometimes required to take so-called 'try-out,' or 'finding,' courses in the seventh and eighth grades before they are permitted to specialize to the extent of fifteen periods a week in a course such as this industrial curriculum offers. In a few cases where sufficient numbers are involved, it is arranged for a part of this training program to be developed in the establishment through part-time co-operative arrangements.

It unquestionably would be both impracticable and undesirable for any school to try to represent so great a variety and number of highly specialized occupational pursuits as are listed for any of our cities of mixed industrial and commercial enterprises in the 1920 Report of the United States Census. The expenditure would be justifiable neither on the basis of educational needs nor of vocational efficiency. Yet our experience during the past few years of experimentation in public school systems has clearly demonstrated that it is possible to offer instruction in selected and organized units of typical industrial pursuits which will result in some degree of understanding and appreciation and give limited insight into the relative conditions, opportunities, and requirements in a number of important occupations, without the danger of over-emphasizing the localized pursuits and the limitations in certain specialized callings.

Possible Preliminary Preparation in Junior High Schools

Experience has taught us that the instruction for those who are preparing for direct entrance into industrial pursuits or skilled trades, or are returning for trade extension work, should help them to acquire a high degree of manipulative skill or add to their technical efficiency. The reports likewise show a generally accepted belief that adolescent pupils might well 'explore' to gain some knowledge of a reasonably wide range of typical industrial activities. These diversified courses often provide first-hand information and experience in important aspects of manufacture, transportation, and commerce as a general foundation and to some extent for guidance in their life work. In the former case, the success of the individual depends largely upon skill and knowledge as these relate to quality and quantity production in some form. In the latter case, the adolescent, or so-called 'self-finding,' period seems to demand appreciative insight into a sufficient number and variety of representative experiences to help pupils try, discover, and develop various capacities for achievement. Such growth and accomplishment would preferably include both understanding and doing, as well as management and supervision of industrial work.

Unfortunately, the terminology for these courses lacks general acceptance and universal adoption, consequently certain obvious confusion has resulted because of the different designations used in various school systems. Perhaps Rochester, New York, has provided one of the most elaborate plans for offering these differentiated courses during the junior-high-school period. In the Washington Junior High School,[4] for example, three types of industrial courses are offered. These are called general try-out, industrial technical, and vocational. The *general try-out course* is for boys in the 7-A grade, since a general requirement in this grade is that every boy shall have one period of shopwork a day. The aim of this work is to give the boy a general idea of what industrial work is like, so that he will be able to make a more intelligent choice of his course when he enters the 8-B grade. This includes home or household mechanics in a number of the schools. The *industrial technical* course fulfills a double purpose. It is both a pre-vocational training period and a general industrial information course. This course is elective for boys in the 8-B grade or above, and it differs from the general, or ''foreign language,'' course only in the fact that one period a day of shopwork is substituted for the foreign language. The boys spend one term in a certain shop and then change to a different shop for the next term, so that at graduation from the Junior-High School they have a definite knowledge of at least five different kinds of industrial work. This course is preparatory for the senior high school or the usual type of four-year high school, and a 'cross-over' may be made to other courses at any stage without loss of time. The aim of the *vocational course* is primarily trade training, but, after completing a two years' course in this department, a boy may enter the Rochester Shop or Trade School and continue his work for three years, at the end of which time he obtains the State Industrial High School Diploma. A boy may enter this course at any time during junior-high-school attendance, provided he is over 14 years of age. Upon entrance, the boy and his parents choose the trade which he wishes to follow. He is then given a ten weeks' intensive try-out period in that particular trade. If he shows ability and, in the judgment of the instructor, will 'make good,' he continues in that kind of work for two years. If, on the other hand, the instructor believes that the boy is unfitted for the particular trade which he has chosen, he is then given another intensive try-out in some other type of work. This try-out scheme is carried on until the boy finds his niche or until it is definitely decided that he is by nature unfitted for industrial trade work. This course varies greatly from the industrial technical one, in that boys do not carry on the junior-high-school work. The day is divided into three hours of shopwork, one hour and a half of bookwork, including English, history, civics, and hygiene, 45 minutes of related shop mathematics, and 45 minutes of related mechanical drawing. It should be understood that the boys in this course are those who intend to drop out of school at 16 or before, and who desire an intensive trade training before going to work. Recently over 70 percent of the boys in this department were beyond the legal age for leaving school, and it is stated that nearly all of them would have left, had they not been receiving some form of trade training.

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[4] Adapted from somewhat detailed report by R. Parkhill, Vocational Coordinator, Rochester, New York.

In the best of these courses for preliminary training purposes, each pupil participates in a reasonable amount of work which stresses the atmosphere and, to some extent, the time element, and accuracy of the commercial plant. Whenever the equipment in the school shop, for example, will not allow boys to do their work by the most practical methods, it is made clear how this would be taken up in the commercial shop and that their work is being carried on in as practicable a manner as possible with the necessarily limited shop facilities. This and other information, relative to the methods used in larger productive industries, is gained through such sources as planned excursions, reliable reading matter, student reports, motion pictures, class discussions, and talks by specialists.

Wherever vocational classes or part-time co-operative courses exist, it usually has proved more satisfactory to carry on as little as possible of the additional productive or highly specialized work in the 'try-out' or 'opportunity' shops of the intermediate school or *the junior high school.* At any rate, it is reported that a reasonable number of industrial plants are being visited, first-hand information of the proper type is being made available, and an attempt to make clear the existing relationship between the school activity and the industry represented is undertaken seriously in a comparatively large number of the schools investigated.

CHANGING EMPHASIS IN 85 ALL-DAY INDUSTRIAL COURSES IN VOCATIONAL SCHOOLS AND SENIOR HIGH SCHOOLS

Those who have participated in the slow but certain reorganization of these separate courses for general educational purposes and for certain values in wage-earning preparation, are well aware that these new developments in the seventh, eighth, and ninth grades are gradually forcing the discontinuance of similar objectives and activities on the high-school level, where accepted junior high schools exist. In answer to the challenge, several senior and regular high schools, *aside from separate trade and technical schools,* have arranged specific plans of part-time co-operation through vocational departments for those who expect to enter industrial callings rather than colleges. The questions which were used as a general basis for the preliminary reports concerning the functions of these vocational courses in 85 schools are shown with brief summaries in Table II.

Wherever possible, some cities have attempted through co-operation with the employer, to have the pupil arrange his training program in the form of an apprenticeship agreement. In other words, this is based upon the following generally accepted principles:

1. That wherever possible, all trade training given in the public schools should be in the nature of an apprenticeship leading to the status of a journeyman.

2. That, since it is generally conceded that a school cannot give sufficient training in the skill and speed of manipulation to graduate a student as a full-fledged journeyman, some of this training must be given during employment.

3. That, in order successfully to carry on trade training, the school must secure the co-operation of the parent, the pupil, and

TABLE II

Questions as a Basis for Preliminary Reports on Day Vocational Schools	Brief Summary of 85 Reports
1. Is it expected that your day vocational school will teach a trade in the fullest sense of the term, or is its purpose mainly to prepare boys and girls over 14 years of age for entrance into the trades?	Over 99 percent of the day vocational courses are preparing young persons for trades with varying degrees of effectiveness. In general little more than preparation for entrance and standing in apprenticeship can be claimed for the instruction of boys and girls under 16 years.
2. Is it expected that the day school instruction will prepare for intelligent citizenship as well as for superior workmanship?	All believe that their courses for boys and girls provide for the intelligent exercise of duties as citizens, in addition to the preparation for making their homes.
3. To what extent do your respective courses teach both the actual operations and the theory underlying these operations?	About 83 percent of these courses provides specifically for instructing pupils as to fundamental principles underlying the shop and laboratory operations.
4. What relation exists between the practical shopwork and the related studies in English, mathematics, science, etc.?	Some co-ordination exists in each course investigated, but the most successful relationships were found to be worked out in 38 percent of them.
5. Is it found desirable to have the shopwork in the day courses always conducted on a commercial basis?	Over 96 percent of these courses provide work which is of chief value for instructional purposes but includes much of the commercial emphasis.
6. Are the units of work assigned pupils in the form of exercises, jobs, or projects?	About 93 percent of these courses seem to have emphasized each method as needed in developing the various instructional programs.

employer, and also the journeyman with whom the apprentice must work.

In several cases these schools emphasize related problems in mathematics, drawing, science, and the like, rather than additional shopwork. For the so-called part-time co-operative and technical groups, it is insisted that this related instruction in the principles of applied science, mathematics, drawing, etc., provides for more rapid advancement and higher grades of work in the occupations chosen. In the most successful co-operative plans a well organized and supervised sequence of shopwork is provided in a productive plant and the co-ordination of shopwork and supplementary school work is of a related and often of vital nature.

Notwithstanding the existence of one or more technical high schools in each of several large cities of 200,000 or more population, it is not uncommon to find some duplication of these centralized courses in other high schools located in the same school systems. Unfortunately, a somewhat similar practice in the overlapping of technical and vocational curricula has caused no little confusion in a few cities which have failed to develop separate courses of study to meet clear-cut objectives for technical education and for industrial wage-earning. For example, more than a dozen schools were found to be providing identical instruction in carpentry, printing, electricity, mechanical drawing, millinery, dressmaking, and the like both for general education values and for advanced trade training, each of which was being sought by a number of pupils enrolled in the same classes.

Despite the care which has been taken by a number of the state departments in setting up standards to meet the Smith-Hughes law as to general objectives, time schedules, qualifications of teachers, and other conditions, there have been occasional tendencies for school officials to change the names of courses which had been designed primarily for general education purposes to include the term ''vocational,'' without materially changing their content and method. Teachers of manual or industrial arts are sometimes reported to have added to this confusion by referring to their courses as ''vocational'' classes. One teacher and one supervisor even indicated that such a misleading designation has been adopted because it is ''more popular'' in the communities where their secondary schools are located.

Then, too, although the inauguration of intermediate and junior-high-school organizations has taken place in a large majority of the cities investigated, *practically no changes are claimed in the purpose, work, or method of the industrial subjects in approximately 18 percent of these secondary schools.* It is interesting to note that 95, or *slightly over 37 percent, of the 256 high schools in these 143 cities have included promising changes in their upper grade curricula under the name of ''senior,'' ''cosmopolitan,'' or* *"comprehensive" high schools.* However, it should be stated that nearly twice this number or *71.5 percent of the high schools now provide so-called sequences of industrial courses, which vary widely in their desirability for general education and vocational preparation purposes but do allow limited election of a more or less specialized nature beyond the intermediate or junior high school period.*

General Tendencies in Industrial Education in 143 Cities

A more vivid picture of the recent but rapid growth of industrial and part-time education in these 143 representative cities may be had from Diagram I. These graphs show the comparative increases over the previous year's additional growth in enrollment for all-day, evening, and part-time schools. These comparisons with the total increases for each type of school include a period of one year, from 1921 to 1922. It will be observed that the all-day schools (1) have experienced an approximate increase of 26 percent

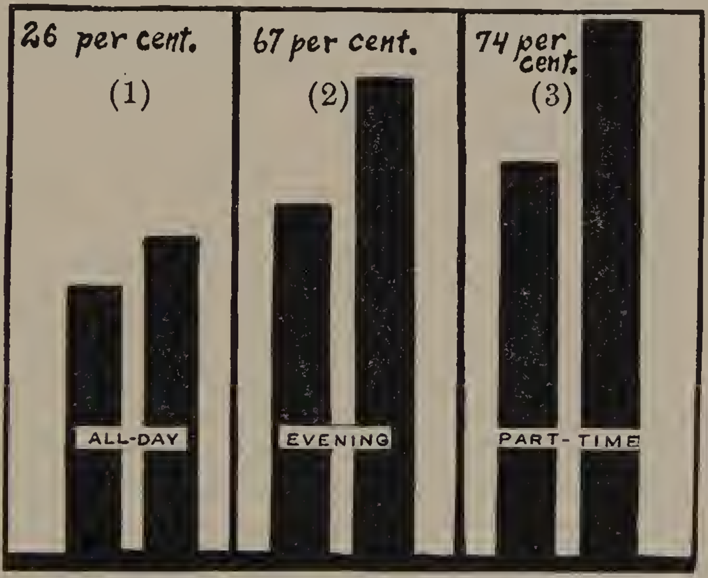

Diagram I. Graphs Showing Percentages of Increase over Previous Year's (1921) Enrollment in All-Day Schools (1), Evening Schools (2), and Part-Time Schools (3), for these 143 City Systems in 1922 over the additional enrollment for the previous school year, while the evening schools (2) and part-time schools (3) show the remarkable growth of 67 percent and 74 percent, respectively. Perhaps it should be stated that, while this represents a decided increase in school attendance over the previous year, 1920 in turn had represented by far the largest yearly enrollment for each type of school since the Smith-Hughes law was passed in 1917.

TABLE III. SHOWING THE RELATIVE PROVISIONS FOR PART-TIME, EVENING, AND ALL-DAY SCHOOLS IN THESE 143 CITIES

Type of School	Number of Schools	General Purpose of Work
Part-time schools for persons of compulsory attendance age, who are not enrolled in full-time schools.	178	*Adjustment of junior workers* through general, industrial, home economics, and commercial education.
Evening schools for persons over 16 and usually over 18 years of age.	108	*Advancement of older workers* in industrial occupations by means of instruction in shop practice and related technical subjects.
*All-day schools** for persons over 14 and often over 16 years of age.	85	*Preparatory training* for entrance into industrial pursuits.

*These reports include both directed vocational departments in senior high schools and separate vocational or trade schools.

Table III shows the relative provisions which have been made by these 143 cities for part-time, evening, and all-day schools. The 178 part-time schools for persons of compulsory attendance age not enrolled in full-time schools are found to vary widely as to emphasis upon different methods of instruction. However, in general, all agree that they are endeavoring to adjust junior workers through general, industrial, home economics, and commercial education. Likewise, the 108 evening schools for persons over 16 and more often over 18 years of age, are assisting in varying degrees to advance older workers in industrial occupations by means of instruction in shop practice and related technical subjects. Also, the 85 all-day schools for persons over 14 and often over 16 years of age, are attempting to aid those who have elected preparatory training for entrance into industrial pursuits. Table IV shows the distribution of these part-time, evening, and all-day schools in the twenty-nine states represented.

In the cases of part-time and evening schools, these findings imply that school officials can ill afford to neglect the continued extension of all legitimate forms of educational service which would appreciably assist large numbers of young workers and adults who have definitely left our regular day schools, but who frequently are far too inadequately equipped either as effective workmen or as worthy citizens. Their educational philosophy holds that this is essential, not alone for the protection of the worker's welfare, but

TABLE IV. SHOWING THE NUMBERS OF PART-TIME, EVENING, AND ALL-DAY SCHOOLS LOCATED IN EACH OF TWENTY-NINE STATES FROM WHICH 143 CITY SYSTEMS WERE SELECTED

State	Number of Part-Time Schools	Number of Evening Schools	Number of All-Day Schools
Arkansas	3	2	1
California	16	13	9
Colorado	4	2	2
Connecticut	2	2	0
Georgia	2	2	1
Illinois	11	5	5
Indiana	12	9	7
Iowa	5	2	2
Kansas	2	0	0
Kentucky	1	1	1
Maryland	4	2	2
Massachusetts	7	4	3
Michigan	10	7	6
Minnesota	8	4	4
Mississippi	4	3	3
Missouri	5	3	3
Montana	2	1	0
Nebraska	4	3	2
New Jersey	13	6	5
New York	16	11	8
Ohio	11	9	8
Pennsylvania	13	8	7
Rhode Island	1	0	1
Tennessee	1	0	0
Texas	5	1	0
Washington	3	1	0
Virginia	3	1	2
West Virginia	1	1	0
Wisconsin	9	5	3
Totals	178	108	85

for the protection of society's interests as well; that both are quite largely dependent upon increased individual and collective efficiency in our industrial organization, which, in turn, is inherently tied up with the new and increasing demands upon family and civic relationships.

In the case of the all-day schools there is more or less recognition of the problem of training workers and prospective workers for profitable employment. A few cities have extended this service to include co-operation with industry for the purpose of helping it to prepare its own workers.[5] The best of these truly vocational courses not only emphasize necessary skill and related technical knowledge, but also stress the much needed independence and self-adjustment in industry by developing thought-provoking situations at every opportunity. Several of these school representatives state that while industrial arts, or the so-called "pre-vocational courses," and strictly vocational courses do aim at entirely different objectives, nevertheless they are closely related in so far as complete programs for industrial education are concerned. In fact, several insist that the success of vocational education depends, to a limited degree, upon the previous acquaintance which its pupils have had with actual conditions in the industrial world, through contact with several distinct kinds of work and study.

Nevertheless, with few exceptions, these school officials are certain that all boards of education should adopt policies for distinguishing clearly between objectives and practices in each type of work represented. They usually express a belief as to the importance of giving mechanical insight and general industrial outlook to workers and prospective workers. In fact, they are now offering general education through vocational departmental supervision for such trainees. They also express the opinion that vocational education is in no way opposed to those industrial courses which are offered mainly as a means of general education. They consider that the specific vocational classes are as truly the finishing schools for the vast army of wage-earners who enter skilled trades, as are, for example, the schools of law and medicine for those who have chosen these respective professions.

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[5] See Ch. VII, which deals with the most successful attempts to train workers in industry.

As will be seen in the following reports on part-time and evening courses, increasing numbers of these schools have recognized that the primary needs for the majority of their pupils from at least 12 to 16 years of age are not merely for high degrees of manipulative skill, but also for reliable information with which to judge occupations in terms of significant demands and changing conditions, and the necessary adjustments involved in these.

Findings in 178 Part-Time or Continuation Schools

As would be expected, the conditions under which the part-time classes are being conducted in these 178 schools vary considerably as to the nature and quality of instruction provided, the suitability of equipment and materials used, and the adaptability and training of teachers in charge. The questions which were used as a general basis for the preliminary reports dealing with the functions of each school are shown with brief summaries of the reports in Table V.

In general, these statements indicate several encouraging improvements. For example, it is obvious that *the follow-up, or supervision of the young workers in employment, more and more is becoming an integral part of the part-time or continuation school system.* With the gradual extension of the compulsory attendance school laws in several states, the school officials are enlisting the co-operation of state and city agencies in order to be of the greatest assistance to boys and girls who are placed in employment. It is the purpose of the schools, with the assistance of these agencies, to place the children in that type of work for which they are best fitted. Visits are made to children on the job by co-ordinators, and when a child is found to have outgrown his work, another better suited position is found for him if this is feasible.

Then, too, increasing numbers of these schools have arranged, wherever possible, for each boy or girl to have a definite training program, both in school and in employment. In many cities[6] *courses of study are being gradually revised to conform more nearly*

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[6] See Ch. V for reports of what a few of these part-time schools are doing.

TABLE V

Questions as a Basis for Preliminary Reports on Part-Time Courses	Brief Summary of 178 Reports
1. To what extent do your part-time courses aim to increase the general intelligence of the young workers with the idea of training for citizenship?	Over 97 percent of the general continuation, trade extension, and trade preparatory courses provide time for special training in citizenship problems. The actual time devoted ranges from approximately one-eighth to five-eighths of the period (4 to 8 hrs.) of instruction.
2. How much of your part-time instruction is being devoted to helping these junior workers develop industrial intelligence and skill for advancement within their chosen occupations?	Over 91 percent of all part-time courses devote time to instruction for extending occupational opportunities in present work and future plans. The proportion of time given to this instruction varies from one-third to three-fourths of the entire time allowed in different schools.
3. Where such opportunities for advancement do not exist, are your boys and girls being prepared for some other definite kind of skilled and remunerative work?	Approximately 46 percent of the part-time schools make specific provisions for training programs and corresponding adjustments in employment. These 85 schools range from those including this as a definite part of their instructional and guidance plans to those having quite incidental arrangements for special cases.
4. What types of general improvement courses do you offer to meet the needs of juniors employed in occupations where advancement is almost entirely dependent upon increased civic and general intelligence?	Nearly all of the schools give more or less attention to personal hygiene, recreational activities, current topics, social science, elementary science, mathematics, mechanics, drawing, and the like; but less than one-half of them emphasize elementary problems in economics, industrial relations, and occupational considerations.
5. Is the work which is being pursued by either boys or girls usually of such a character as will permit of directly related instruction, in so far as strictly industrial subjects are concerned?	Nearly all of these schools report direct outcomes of vitally related instruction, but they likewise report limited possibilities for instructional relationships in connection with a large number of occupations represented.

to the needs of the junior workers in their daily employment. Closer co-operation is now being secured from employers by a larger percentage of schools. In a small number of cases this is done by informing employers periodically of their employes' progress on training programs, and also relative to other opportunities which the public schools are providing for junior and older workers. *Another notable change is found in the extended guidance and placement service*[7] *which makes it possible for each pupil in a number of these schools to become acquainted with employment opportunities before receiving a working permit.* In several cities he also can be advised, before he is placed in employment, of the requirements in the proposed work and the necessary training needed for success in a chosen occupation.

The average age of the pupils in these classes is slightly over fifteen years. In some cities large numbers of old permit workers are being allowed to escape compulsory school attendance. However, the working permits in most cases have been carefully guarded and a fair percentage of these children is to be found in the part-time schools. Most of the permit workers are employed for eight hours a day; in a few cases the working day is more; and in others somewhat less. Only comparatively few employers throughout the twenty-nine states pay the workers while attending school. Although these employers co-operate with, and approve of, the part-time school, they will state that they are not justified in paying the junior workers while they are attending school. The hours of instruction vary in different cities. In some states the pupils attend part-time school for four hours a week, while in others they are required to attend classes for eight hours a week. With comparatively few exceptions, it was found that in case a pupil failed to report for his classes, his employer was systematically notified and the pupil was warned concerning the possible withdrawal of his working permit in case of repeated offenses.

It is evident that *in some schools much consideration has been given to the problem of grouping these junior workers advantageously,* in order that the instruction might be of the greatest

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[7] See Ch. I in Section I of this *Yearbook* for detailed statements of the guidance activities in these 178 schools.

TABLE VI. RELATIVE EMPHASIS GIVEN TO EACH INSTRUCTIONAL PROVISION BY THESE 178 PART-TIME SCHOOLS

Emphasis	Number of Times Mentioned
I. Helping pupils to appreciate civic responsibilities..	171
II. Helping pupils to secure work for which they are fitted, and proper training for it................	164
III. Helping pupils to gain desirable attitudes toward work, employers, other employees, and the community	161
IV. Helping pupils to form suitable habits of using leisure time, etc.	156
V. Helping to increase the proficiency of junior workers for jobs they now hold..................	152
VI. Helping pupils to obtain the best training employment can provide................................	137
VII. Helping junior workers to protect and to increase their health in employment......................	88
VIII. Helping boys and girls to understand some of the important relationships and economic principles pertaining to industry and commerce............	43

assistance in their daily lives and work. Table VI shows the relative emphasis which is being given to each instructional provision by these 178 part-time schools. This wide variation in emphasis is another indication of the decided lack of uniformity in the practices of the different part-time schools in the localities investigated.

Where there are enough pupils of compulsory attendance age in a factory or business establishment, it sometimes proves desirable to conduct the classes within the factory or office building. This not only seems to insure better attendance, but also affords special material for problems and special equipment which can be utilized in individual, group, and class instruction. For similar reasons, it has been found desirable in some cases to hold home-making classes in private homes or in public school cottages. In both of these cases pupils are usually excused from the shop or laboratory instruction in the part-time school, but are often required to attend the regular classes for instruction in civics, English, mathematics, drawing, and the like.

The most successful instruction has been observed where the greatest flexibility existed in the methods of presenting the work. Much constructive criticism might well be offered with respect to the mechanical methods of teaching in a number of the part-time schools. It is usually evident that *the interest of boys and girls cannot be held and the aim of the instruction cannot be realized unless the teaching is adapted to the respective needs and abilities of the individual learners.* Of all public school teachers, a part-time teacher should possess an unusual humanistic touch. A large majority of these pupils have left school because they disliked it for one reason or another. It requires, therefore, on the part of the teacher a deft touch of adaptability to bring the pupils into a receptive frame of mind. It is often the case that the teacher must possess a spirit of play in addition to her teaching qualities. It is this spirit which frequently helps to relieve any attitude of compulsion or feeling of drudgery in the school work.

It is noted that *greater care is being taken in selecting teachers for the part-time schools in most cities,* especially where the difficulties in providing adequate instruction are appreciated by the school officials. *The extension and residence teacher-training classes are also reported to be doing much* throughout nearly all of these states by helping teachers determine and organize suitable plans and lessons for their classes, and also by teaching them methods and devices for presenting these units most effectively and economically.

Reports from 108 Evening Vocational Schools

In addition to the problems in meeting the needs and respecting the interests of these junior workers of continuation school age, we shall consider those problems of assisting the large number of more mature young persons and adults who have left the schools but whose education and training are quite inadequate for efficient service and possible promotion in their specific occupational pursuits. As will be noted in Table VII, the most successful instruction offered for these workers in 108 evening schools has resulted from proper organization of shop, laboratory, and related courses on the small-unit plan, and especially where these have been definitely adapted to the immediate needs of the various individuals and groups.

TABLE VII.

Questions on a Basis for Preliminary Reports on Evening Vocational Courses	Brief Summary of 108 Reports
1. How are the specific and immediate needs of the various workers who can profit by evening instruction being determined and met?	Approximately 88 percent of these courses attempt to keep the instruction flexible by analysis, investigation, co-operation, individual instruction, and short-unit courses (usually from four to twelve weeks).
2. Does the limited time available for vocational instruction in your evening classes make it possible to teach both the theory and practice of a complete trade?	Over 96 percent of the schools are offering extension instruction in both theory and practice of the trades in which supplementary training is most needed.
3. To what extent does your instruction for productive wage earning help the learner to solve the actual problems he meets in his daily work?	Nearly all of the schools are providing more or less successfully for upgrading workers (about 10 percent) by dealing with immediate and advanced problems.
4. Do your short-unit courses, which are organized to help the worker forward one step at a time, provide the best means for aiding him to master his chosen occupation?	About 83 percent of the schools insist upon suitable short-unit courses as the most effective basis for evening school instruction.
5. How do you determine the advisability of offering a given subject by the short-unit-course plan in preference to the long-term-course plan?	Nearly all agree that the needs and interests of the workers and the demand and nature of the trade usually determine this.
6. What are some of the reasons which have frequently caused evening-school students to drop out of their respective classes?	Those mentioned most frequently are ''lack of suitable instruction,'' ''lack of proper equipment,'' ''overcrowding of classes,'' ''working overtime,'' ''period of sickness,'' ''changes of work,'' etc.

These reports indicate with varying amounts of emphasis that there are two distinct groups of trade workers from which the evening trainees are usually recruited: (1) a number of advanced workmen who need special training in related subjects, such as trade mathematics, trade drawing, and the like; (2) many helpers and assistants who have a limited background of practical experience and who need to be taught further tool manipulation, methods of construction, etc.

It is the purpose of the evening vocational school instruction to aid both groups of workers by giving those who are employed in the industry, in so far as is possible, what they need in skill or knowledge, or both. In a few cases it was found that both of these groups of workers have not only been upgraded on the short-unit plan in the evening classes, but likewise have had trade extension during the dull seasons by means of intensive all-day schedules.

In some cities it is noted that evening school classes are less successful than in others. In more than a few cases classes have been closed for lack of students or for irregular attendance. This is found to result usually when the students do not get the type of instruction they desire. It may be due to several causes, the most frequent of which are "lack of suitable instruction," "lack of proper equipment," "over-crowding of classes," and the like.

Perhaps the reason which is responsible for more losses in evening school attendance than any other is the failure to provide the proper kind of instruction. Too many schools assume that it is their business to dictate exactly what each student should and can take. Although the evening school students frequently misjudge their needs and often are unable to plan their own upgrading programs, it is recognized that the workers' confidence, even in the short-unit courses, can be gained only by making the instruction obviously worth while to them. When this supplementary school work is once 'sold' to the trainees on the upgrading or supplementary extension basis, other needs will be made evident to all concerned, and, as a result, satisfactory solutions will be provided as the occasions demand.

It has proved to be useless to advertise classes in the various trades unless there is a sufficient amount of equipment, as the evening school student often comes for the purpose of getting an opportunity to use equipment or materials which he does not have the privilege of working with in his daily employment. In case he does not receive this desired instruction, he will soon become disinterested and may drop out of the evening class.

Experience has demonstrated that all theory and class discussion for these students must be given from a practical point of view and presented in shop terms to be most effective. The instruction should usually be of such a character that the students can take tangible knowledge or skill right back to their jobs and put it into practice. If for any reason it does not work out as presented in class, some schools report that the students are apt to become suspicious and may even lose confidence and quit immediately. On the other hand, where this is successfully done, it is found that a new interest exists, as the instructor has gained much added confidence from the individuals in his class.

A large amount of individual instruction must be given. Of course, the instructors must be interested in the things that go to make up the daily lives of the students. Much has been accomplished in some cases, where the instructors have made it a point to show their interest by occasionally visiting the students to find out by first-hand observation just what their daily problems were.

To measure the success of an evening school entirely by numbers is wrong. However, most of the evening students work all day, and the evening is their only time for self-improvement. Unless the class is limited to a number that will give each student a reasonable amount of individual instruction, some are certain to feel that their time is being wasted and consequently they will drop out of the evening classes.

The most successful of these supplementary courses in the 108 evening schools are those which not only emphasize the necessary technical skill and related knowledge, but also co-operate with employer and employees in order to stress the much needed adaptability and self-adjustment in each desirable industrial pursuit. This co-operation has resulted in a greater development of thought-provoking problems in every division of the trades represented. However, it unquestionably is being recognized more and more that production work in industrial occupations is becoming increasingly automatic for a large number of machine operators and semi-skilled workers. This is an important fact, as in our eagerness to safeguard the interests of these trainees, we should not accept opinions blindly, but should seek the truth in preference, whenever possible. At least 36 of these evening extension programs are providing for continuous investigations and analyses to prevent the many possibilities of preconceived course building. These vocational surveys have also succeeded in keeping the instruction more flexible by ascertaining the actual demands and changes in both separate and closely allied occupational pursuits.

General Conclusions

The passage of the Smith-Hughes Act by Congress in February, 1917, directed attention throughout the United States to the importance of vocational education. Since that time, there has been some opposition to the vocational industrial courses on the ground that they are not needed and that they are expensive. However, it would seem that the pupils who are going into industry have as much right to the training they require for their future vocations as do the pupils who are planning to enter business or professional occupations. Herbert Hoover, Secretary of the United States Department of Commerce, has ably discussed and summarized this question with special reference to the opportunity and obligation of public school systems, as follows:

> ''If vocational education is worth while, certainly as a nation we can afford the price of such education. Our only concern is to know that it is worth while. If it is, expenditure on account of such education is in the nature of an investment which will yield large dividends from year to year through the progressive increase of labor skill and industrial efficiency.
>
> ''We in this country believe that education in general pays for itself and is worth while, and if this is true of any sort of education, it is certainly true of vocational education—that it pays for itself. That is the 'acid test,' particularly of vocational education—that it shall pay for itself. If it does not, it is not vocational education at all.
>
> ''Men of affairs the country over are being impressed with the fact that the cost of training labor on the job is one of the great industrial costs, but they know that the cost of inefficiency and lack of training is very much greater, and that labor must be trained whatever the cost. If they or the community do not provide such training, they cannot compete with the foreign producer whose labor is vocationally trained at public expense, nor can we as a nation adequately supply our own needs for the product of labor, if we neglect to provide for the training of labor.
>
> ''The cost of providing this training is just as properly a charge upon the public revenue as any other form of education. In the interests of labor itself such training cannot be devolved upon the employer. Organized labor is perfectly right in insisting that vocational education shall be under public supervision and control, so that the interests and welfare of the worker as well as of the employer will be taken fairly into account. The cost of such training certainly should not be put upon the individual worker unless we

> are prepared to abandon our traditional policy of providing free education and equality of opportunity for our youth. We cannot in fairness continue to provide specialized education free to the few who propose to enter the professions, while denying education to the many for the commoner vocations.
>
> ''A community must pay either for the cost of training labor or for the much greater cost of inefficiency of labor, and inefficiency of labor means inevitably general industrial and commercial inefficiency.''

All of these reported findings witness to the fact that the efficiency of vocational industrial education depends largely upon the development of an effective system of co-ordination, paralleled with provisions for individual instruction and appropriate counselling for part-time, evening, and day school students. In order to be most successful, each type of vocational education and training must provide a definite preliminary or supplementary program for each student, that will preferably lead by successive steps, through divisions of the trade, often to the status of a journeyman. The public schools are 'speeding up' these processes by giving preliminary and supplementary technical knowledge and training in the manipulation of tools (hand and machine), the handling of materials, the reading of drawings, the using of trade terms, and the like.

School preparation for skilled occupations should always be supplemented by definite instruction in the establishments, if the best results are to be had. While apprenticeship training, in its early form, has been almost entirely neglected during the recent years of our rapid industrial development, it is now a generally accepted fact that the employer cannot escape the cost, in time and money, necessary for systematic supplementary or apprenticeship training in the trades or occupations in question.

Two concrete illustrations of this realization on the part of the employers are as follows:

> ''Young men of the United States are not learning building trades,'' declares the annual report of the committee on labor of the Associated General Contractors of America, at their fourth annual convention. These trades are those of structural iron workers, plumbers, carpenters, painters, brick masons, roofers, plasterers, paper hangers, building laborers, and stone cutters.
>
> With the exception of the first three, the report stated, there were actually fewer workmen in 1920 than in 1910, and only the structural iron workers and the plumbers had kept pace in their increase with the population of the country.

The report named two causes for the decrease: ''The cutting off of immigration by the World War, and later by restrictive immigration laws,'' and the second was the fact that young Americans were not learning the trades.

The American Engineering Council, in making public a report of its committee on the elimination of waste in industry, with special reference to labor turnover, recently declared that ''You're fired'' and ''I quit'' cost metal trade firms in this country $100,000,000 in one year. ''Experts estimated the costs of labor turnover vary from $50 to $250 for each employe hired, trained, and separated,'' the committee report stated. An average figure of only $50 applied to 2,000,000 employes in the metal trades industry alone, means an average waste of $100,000,000 in this one industry. This committee recommended that employers study employment methods and reasons for quitting work.

The success of the instruction for industrial education in these 143 city programs has been reported somewhat in detail as to purpose, content, and method. As would be expected, the training and experience of the directors, teachers, and co-ordinators in charge, and the provisions for determining and imparting the skills and knowledge involved have usually been an excellent index to the quality of instruction. The co-ordinators are proving their worth quite generally by assisting teachers in connecting the activities of the school and the occupation, as well as the home and the community in several cities. The nature of co-ordinators' positions allows them to aid the school officials and teachers in maintaining instruction which reflects the requirements made upon workers and prospective wage-earners. They also are able to inform the employers of the educational opportunities which are and can be provided by the school system, with their co-operation.

While it is encouraging to note these marked improvements in methods and procedure, it certainly would be unwise at this time to consider any promising program as more than tentative. These varied, but effective outcomes of the past few years should point the way for further experimentation, which is certain to make possible even more reliable comparisons and measurements. Nevertheless, the suggestive reports in the following chapters should challenge all concerned to study their local programs with the conscientious desire of improving the opportunities which now exist in each unit or course designed as a means of industrial or part-time education.

CHAPTER II

DEVELOPMENT OF INDUSTRIAL EDUCATION PROBLEMS IN PUBLIC SCHOOLS

HOWARD BRIGGS
Director of Vocational Education, Cleveland, Ohio

This is not an obituary. This statement is made because many of my friends of the academic school predict a renaissance of all things classical. They are right; it is greatly needed. Vocational education must also undergo a renaissance, but it must not be eliminated in the process—it must be strengthened and broadened and given more tangible objectives.

A professor of mathematics in a classical college recently stated with much satisfaction that the theory of formal discipline had come back into its own, and that the time was coming when every teacher of algebra in the high schools would be required to take a course in calculus before teaching algebra. Owing to my ignorance, I made the *faux pas* of requesting information relative to the practical value involved and was informed that, in the first place, no one could be considered 'educated,' in the cultural sense, until he had undergone the mental gymnastics involved in mastering the aforesaid subject, and secondly, that a teacher never could appreciate the true value of zero until she had studied calculus. As I look back upon the period during which I struggled with calculus, I believe that he is right in regard to the latter part of his theorem. I say theorem, advisedly—attaching, of course, the Q. E. D.!

Without a question we are undergoing a period of retrenchment in educational expenditures. All subjects vocational have been constantly questioned by the academic group and we have made enough blunders to offer every opportunity for a good 'come back.' As I read through many clippings of vocational education collected since 1909, and peruse the many rash and impossible claims made relative to its efficacy as a sovereign panacea for the lesser I.Q.'s in the public schools, and review my early teaching experiences during which I vainly attempted to apply good pedagogical principles to inanimate matter, I decide that we have been strong in publicity but weak in analysis and that we should apply the principles of trade analysis to objectives as well as content.

Recent articles of the "Iron Man," Arthur Pound, type, and the fall of our early vocational education inspiration, Germany, have been hailed by some persons as a final proof that the old idea was right after all, and that the old, so-called cultural education, dating from the monastic period, was vindicated. Shall we ever get down to a rational basis?

Educators are sometimes inclined to follow an educational pendulum, one end of the swing being vocational and the other classical. There should be a point of equilibrium in the swing and national welfare demands that we find it.

As vocational educators, we fail to see beyond the utilitarian objectives, and the classical school takes the attitude of the negro, who, after leaving home and attending school for several years, came back to his home town.

"Is yo' got your education, Mose?" asked his mammy.

"I sho' is," said Mose. "What's mo', I'se got culture."

"What am that?" said his mammy.

Mose hesitated for a considerable period and then answered, "Culture? H'm, dat's sumptin' what I'se got and you ain't."

Culture should be included in the education of every worker, but it should not be spelled with a 'K' and it will never be exactly the same thing for any two people. The man who is happy in his work, who has had that education which enables him to appreciate and enjoy the beauty of a finely designed piece of mechanism, even though it weighs many tons and is covered with grease and dirt, who enjoys his daily relations with his fellow men, who can visualize parts in their relations with the whole, who can impart his satisfaction to others, who can with pleasure interpret the environment in which he lives, moves, and has his being, both at work, on the street and at home, is cultured, even though he appreciates not the significance of ‘‘zero.’’

I recently heard the statement that Germany’s fall was due to her intensive vocational education policy and that she now had turned to the study of social relations. The truth of the matter is that no other nation could have so long withstood the siege of the combined armies of the world, and that Germany is still carrying on her program of vocational education, but that she has realized that the element of social relations is of equal importance to the strictly utilitarian phase of her educational program.

We have a part-time, apprentice bricklayers’ class in Cleveland. Is there culture in bricklaying? We believe that we have found it through watching these boys at work. For example, a new building has significance to me now. I feel a little thrill of elation when I recognize a Flemish bond, when the coloring of tapestry brick is well matched, when the construction is well done, and I know that these boys are obtaining a culture in their own life occupation which will mean as much to them in their lives as ‘‘zero’’ does to my mathematical friend in his environment, but we should not make the latter gentleman learn how to match brick nor should we require the bricklayer to learn the value of ‘‘zero.’’ Both forms of culture are necessary to our national welfare and for the growth of our civilization.

We must have bricklayers, and some men, by capacity, aptitudes, and interests, will become bricklayers. An education which will make the bricklayer feel that culture is something that the other fellow has, and that it is something that he is unable to get, will never cause a social unity and a happy nation.

Relative to the age of the ‘‘Iron Man,’’ one feels that many truths are uncovered by Arthur Pound. We who have been engaged in attempting the education of tradesmen have found these things out long ago.

A large percentage of our shop jobs require but a minimum of intelligence and may be mastered in a comparatively short time. The machine does the rest. But who constructs this wonderful piece of mechanism and how frequently must it be renewed? Its very existence has eliminated the possibility of educating skilled tradesmen through the medium of the shop itself and yet the construction and replacement of these wonderful mechanisms require a large corps of skilled mechanics.

Our schools, then, are faced with this problem: A large group of boys with low I.Q.'s entering jobs requiring the minimum of vocational preparation, and a smaller group of pupils entering jobs requiring high aptitudes and capacity and considerable trade-preparatory training which cannot be obtained in the industry itself except in cases where corporations maintain training schools.

There are three mediums offered by the Smith-Hughes Law for the solution of this problem: the day trade school, the part-time school, and the evening trade extension school. At present, we are decidedly enthusiastic over the second method and, like the burned child, avoid the first. The third form of vocational education has never caused any embarrassment; hence we are content to allow it to continue as it is.

What is the objective of the all-day school?—The preparation of boys and girls, fourteen years of age and over, for definite life vocations.

I shall briefly state the cause of the ''burns'' which we have suffered, but which have not been severe enough entirely to discourage many of us concerning the possibilities of the all-day trade school. It is believed that this form of education has a legitimate place if administered correctly and if given an opportunity for natural growth rather than attempting to plant it in a rock pile and water it with mistakes. Following is a list of what I consider to be the chief causes of the failure of *some* all-day trade schools in the past:

1. Adequate surveys followed by careful analysis for the determination of definite objectives were not made preceding the organization of schools of this type.
2. The schools have been made a dumping ground for failures in the academic schools and also for incorrigibles.
3. Proper working contacts have not been made with the labor organizations and with the employers.
4. Pupils have entered without proper guidance that should have come through vocational information and pre-vocational shop work in the junior high school.

5. Effective placement activities have not been organized.
6. Pupils have entered too young to profit by the content offered and too young for placement upon the completion of the school work.
7. Too big a 'show' of productive work has been attempted, neglecting the necessity of every boy's learning every fundamental trade operation.
8. There has been too much narrowness in our course content, with neglect of the avocational element in the worker's life.
9. Industry has not co-operated with the school until labor troubles developed, and then has attempted to exploit the all-day school to the detriment of the pupil.

Relative to Point 1, the question, of course, arises concerning objectives. Should we include local trades only, or utilize accepted trades common to the country?

This in turn influences Point 5. Unless we educate for trades common to the community, placement becomes impossible. Therefore, it seems to me that both factors must be considered—local placement opportunities and the possibility of placement in other parts of the country in the same trade.

In answer to Point 2, the academic school man throws up his hands and cries: "What shall we do with the defectives, if they cannot learn a trade?" In answer to this I would suggest that special classes, including training in hand work, be operated for the defectives, which will enable them eventually to enter "one-operation jobs" in various trades as the economic demand arises, but I would call attention to the fact that a mental defective never has, and never will, become a skilled tradesman. We are creating a false, 'white shirt,' social attitude by creating the impression that only the defectives should enter trades occupations. This group will eventually leave school, enter industry, and operate machines built and maintained by the boys with greater capacities who have been trained in trade-preparatory classes. The retarded boy should be so trained that he will be able to go from job to job in various shops as the national need arises, and that he will be happy in working up to the limit of his capacity, if given an educational content which he can assimilate in school and utilize in life.

If the all-day trade school is limited to the smaller group mentally qualified to enter the skilled trades, Point 3 will take care of itself. Your employer and your labor organization will never sympathize with a school which has for its objective the flooding of the trades with a group whose mental capacity is so low that the academic school has given it up as hopeless.

Point 4—lack of suitable earlier guidance—cannot be emphasized too much. No child should enter a trade-preparatory course until he has made a careful study of all vocations, considered their opportunities, and interpreted his own interests, aptitudes, and capacities in terms of the various vocations through manual expression in the pre-vocational courses of the junior high school.

Point 5. Placement activities should be considered a vital factor of the situation. A boy who has received two years' training in machine shop practice, and who is found, two years later, working as a grocery clerk, certainly is a glaring advertisement of either misdirected education or a lack of interest upon the part of the school in marketing its product efficiently. The truth of the matter is that so many pupils of low mental caliber had been forced into the trade school that there was no market for the product of that quality.

Point 6. Several skilled trades do not desire to accept boys under eighteen years of age. Experience has proved that two years is a desirable period for trade-preparatory instruction. Hence, it may not be desirable that pupils should enter the trade school until they are sixteen or until they have finished the junior-high-school pre-vocational courses. Over-age boys, provided their mentality is normal, should be accepted, but not defectives. The average boy who has too low a mentality to pass at least the junior-high-school requirements will never make a skilled tradesman.

Point 7. Productive work should offer instruction in shop methods, develop creative ability in designing methods, teach cooperation and social relations, but should not be carried to the point where the product is the chief objective. We should rather analyze and check a teaching content through some form of block operation card in order that every boy should have contact with every fundamental operation involved in the trade.

Point 8. The utilitarian aspect of the trade school content should not be carried to the point where the avocational phase of the worker's life is entirely neglected. He should have a knowledge of social and economic values and should develop capacities of appreciation. The tradesman, for instance, should learn to read and enjoy good books—and I do not mean by good books Chaucer's *Canterbury Tales* in Old English. (I wonder how thick the dust is upon books of this nature in the public libraries, in spite of the fact that practically all high-school graduates have been exposed to their contents.)

In regard to Point 9, the employer should be approached consistently and persistently by the school before he approaches the school with some impossible proposal. We have found that the employers' association can and will co-operate with labor organizations to the benefit of all-day trade schools if all parties are approached at the right time. Without this co-operation the school is ''between the devil and the deep sea.''

In regard to the part-time school, it is believed that wonderful opportunities are offered for the education of the boys and girls already employed in industry. We are enabled through this medium to develop the pupil who has high capacities, but who has been forced by economic pressure to enter industry. Through trade extension teaching content we may elevate him from the limitations of the 'one-operation job' to the opportunity for employment in a skilled trade.

The boy of lower mentality, who never will get beyond the 'one-operation job,' may be trained 'horizontally' rather than 'vertically;' that is, in place of attempting to teach him the content which his limited capacities prevent him from ever mastering, we can extend the content upon the horizontal plane to cover a broader field of the jobs requiring only the simple operations, so that he may always find employment, irrespective of the intensive seasonal demands of certain industries.

Both groups may be developed socially and given the avocational background for that happiness and appreciation of the things with which they must work and by which they will be surrounded, according to each individual's capacities and aptitudes.

Compulsory part-time work was discouraging in that we had all of the 'dregs' as well as the better material. In many cases it seems impossible to do anything for the pupil and yet, the fact that we can do so much for so many, possibly warrants compulsory attendance upon the part of all. Indeed, I am confident that, no matter how poor or how negative may be the attitude of the material brought in, we shall be able to do at least a little towards forming a better social attitude, although it may not be immediately manifest.

Part-time education becomes almost an individual matter and for this very reason is difficult to administer. But, given the exceptional teacher and small enough groups, its possibilities are unlimited, and the larger the city, the greater the opportunity for the division of groups into units large enough for economical administration and for an education best adapted to the needs of the individual.

The evening trade extension classes have made good from the start. I believe that it is a wise national policy to enable our adult craftsmen to come back to school and to perfect themselves in that phase of their life vocations in which they lack sufficient training.

The objection is raised that no provision is made for the man without a trade. Adequate trade-preparatory courses will eliminate this problem eventually. For the present, the question arises: "Is it possible to teach an entire trade through evening class instruction? Can a teacher efficiently instruct a mixed group of beginners in trades?" As our funds are limited, is it not wiser to utilize them in educating the few best equipped to profit by the instruction? This does not prevent communities from independently establishing trade-preparatory classes, if they so desire, nor does it prevent corporation schools from operating their own apprentice training classes.

In conclusion, may I state my hope for a renaissance in all matters educational, my hope that we may all eventually become broad enough to demand neither that every one appreciate "zero" nor that anyone be given an education so narrow that it will limit him to a knowledge of things utilitarian only?

CHAPTER III

TRADE AND JOB ANALYSIS AS AN AID IN VOCATIONAL CURRICULUM BUILDING[1]

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The Need for Directed Learning

In the acquisition of any kind of skill there are two opposite ways of proceeding. According to the one, the learner makes random, undirected attempts, most of which are unsuccessful. As the number of trials increases, however, the unsuccessful movements decrease in number and the successful ones come more quickly until finally the learner acquires the desired skill. This method is usually called 'trial and error.' It is possibly best illustrated by the way in which animals learn the tricks which we see them perform.

According to the other method, the learner makes no blind fumbling movements, but follows a procedure which has been laid down by some one who has already mastered the skill. This we may call 'directed learning.' It is typified by much of the learning that goes on in school, especially the forms of human learning where reason and free ideas play an important part.

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[1] The writer desires to acknowledge the excellent assistance rendered by a number of persons who, at the request of the editor, gave their views regarding the subject under consideration. Owing to limitation of space, these contributions could not be presented in their entirety. They have been incorporated, however, in such a way as to make the article an authentic representation of the best opinions and practices in the field. Specific acknowledgments are scrupulously made in the body of the text, and copious references to the publications of these individuals are made in the references that close the chapter. By way of further acknowledgment the writer desires publicly to thank the following persons for their kind responses to the chairman's request for their views: Clyde A. Bowman, Director of Industrial Arts School, The Stout Institute; Werrett W. Charters, Director of Bureau of Co-operative Research, University of Pittsburgh; Layton S. Hawkins, Director, and Merritt W. Haynes, Assistant Director, Department of Education, United Typothetae of America; Emily G. Palmer, Special Agent for Training Part-Time Teachers, University of California; Robert W. Selvidge, Professor of Industrial Education, University of Missouri.

In a good deal of everyday learning the trial-and-error method predominates; as, for example, in a child's acquisition of skill in crawling, and co-ordinating hand and eye. In the learning that takes place in school, however, is to be found more directed learning. At least, such is the intent of education. For the trial-and-error method is wasteful. We need not spend time arguing the truth of this statement. Educators generally accept it, and are directing their energies to the elimination of waste. In spite, however, of their earnest efforts, extended over a period as long as man's civilization, there still exists in schools a great amount of wasteful trial-and-error learning. Especially is this true of the so-called 'vocational subjects.'

One reason for this is that these subjects have been added to the curriculum so recently that adequate methods of teaching them have not yet been evolved. Another reason is that they are perhaps more complex, in the sense that they involve a greater diversity of co-ordinations than the more strictly academic subjects. They are psycho-motor, involving co-ordinations between hand and brain; between what the psychologist calls ''idea-systems'' and ''motor systems.'' And between hand and hand, and idea and idea. Think how many parts of the body must be co-ordinated in such an activity as typewriting: trunk muscles, arm-hand-finger- and eye-muscles. And think of the things that must be retained in mind and reduced to automaticity: location of keys on the keyboard; the mechanism of the machine; spelling, punctuation, and the like.

ANALYSIS A PRELIMINARY TO EFFECTIVE INSTRUCTION

Because of these facts, teachers of vocational subjects need to take especially vigorous measures to make their instruction a matter of directed, rather than undirected learning. In making the transformation the first step they must take is to analyze the work as it is performed by an expert worker and specify its components. The second step is to analyze what a learner must do in acquiring the necessary skill. Only after taking these steps can a rational method of directed learning be developed.

DEFINITIONS OF JOB ANALYSIS

This process is roughly called 'job analysis.' A number of attempts have been made to give a formal definition of the term. As many as ten definitions are quoted by Strong and Uhrbrock (16, p. 21, 22).[2] Perhaps as serviceable a definition as any is: "Job analysis is a process of dissecting a job and describing its component elements." (1)

CURRICULUM BUILDING ONLY ONE END OF JOB ANALYSIS

It should be remarked that job analysis may have other aims besides that of vocational curriculum building. It may be carried on from the standpoint of the efficiency engineer, desirous of improving methods of work and increasing efficiency; from the standpoint of the employment manager and vocational counsellor desirous of listing the requirements of a job.[3] As colored by these various ends, the attempts at job analysis have gone under several names—'vocational analysis,' 'trade analysis,' 'occupational analysis,' 'job analysis.' The first two refer to analysis of a profession or a trade; the third, to analysis of a specialized occupation within a profession or a trade; the fourth, to analysis of a particular operation within an occupation. The distinctions may be illustrated by calling the profession of physician, a 'vocation;' that of eye-specialist (oculist), an 'occupation;' and that of dilating the pupil of the eye, a 'job.' Again, the machinist's trade is a 'vocation;' lathe operating an 'occupation;' cutting a three-eighth inch shaft a 'job.'

The distinctions between these kinds of analysis have not been carefully observed; the term 'job analysis,' since achieving its war-time popularity through the activities of the Personnel Division of the army has been quite indiscriminately applied to the analysis of professions and trades and the jobs which they involve.

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[2] Numbers in parentheses refer to the references at the end of this chapter.

[3] Though it has been properly suggested by Scott and Clothier (13) that this latter would best be called 'occupational description,' the name 'job analysis' is still often applied to it. For a list of other ends for which job analysis may be made, see Strong and Uhrbrock (16) and Kitson (10).

Neither have the distinctions been clearly made between the different ends of job analysis. From one point of view it is held that there is no difference in the ends for which the analysis is made. Analysis is analysis, and the same procedure must be followed, regardless of the end to which the results are to be applied. This point of view is used to justify those who use the term 'job analysis' indiscriminately.

In point of fact, however, as it is generally practised, job analysis is employed for but one purpose at a time, and the best results are probably secured, at least in this embryonic stage of job analysis, if the exact purpose of the analysis be kept in mind while it is being made. In harmony with this statement it should be made very clear that the analysis herein considered is that which is made for the specific purpose of arranging courses of study in the occupations.

Steps in Job Analysis

It is generally agreed by those who undertake job analysis for the purpose of vocational curriculum building that the following steps must be taken: (1) List general facts concerning the job, such as length of learning period, special health risks, entrance requirements, etc. (2) Name and describe the duties inherent in the job, both regular and occasional. (3) Set down the knowledge required to do the job. (4) Set down the supplementary and related knowledge to be desired. (5) State the promotional possibilities.

Division into Units

A slightly different formulation of the steps to be taken has been advocated by some investigators, according to which an occupation is divided into main divisions called 'Groups;' each Group into 'Units;' and each Unit into 'Lessons.'

It will be noted that the former of these methods seeks to list all the jobs involved in the occupation, while the second seeks rather to describe the operations of the occupation in various combinations. According to Selvidge (14, pp. 25, 26):

> "Very few trades can be analyzed on the basis of *jobs*. It is not practicable to list all the jobs that may occur in a skilled trade. Even if it were

possible to do so, it would be necessary to analyze each job into the processes involved in doing it, in order to teach the job. Since every conceivable job is made up of the operations of the trade, in various combinations, the simplest method of procedure is to analyze the trade for the operations involved and use this analysis as the basis of analyzing and teaching any job that may arise. This trade analysis is in reality the basis of all job analysis. No job can be analyzed except in terms of the operations of the trade or vocation.

''It is not necessary to list the unskilled or low skilled operations at all, as they can be performed by any person of ordinary intelligence with little or no instruction or practise.''

According to this view, too, it is not necessary, *in making the analysis*, to list the jobs in any particular order, especially in order of their difficulty, for ''it is safe to say that in case of more than half the operations of a trade it is impossible to determine which operation is the most difficult to perform. It is also true that an operation might be difficult for one person and easy for another. In practise the easy and difficult come together.''

An attempt to reconcile the differences of opinion regarding the listing of operations and their arrangement for teaching has been recently made by MacDonald (12). The writer ventures to propose that a psychological analysis of *the process of learning a trade or job,* carried on with rigid scientific technique, will reveal what is in the majority of cases the best order in which the separate operations should be presented to the learner.

WHO MAKES THE ANALYSIS?

The co-operation of several classes of persons is needed in making the analysis. (1) Workers in the occupation are indispensable. Their interest must be secured and their willingness to submit to observation and interrogation. (2) An investigator is also necessary who has had considerable scientific training, preferably training in engineering (at least for analysis of the mechanical trades) and psychology. Such equipment on the part of the investigator is, of course, too much to hope for at the present time. Some persons do not see the need for it at all. Strong and Uhrbrock, however, are quite ready to demand it, averring, ''the job analyst should be a psychologist of no mean order'' (16, p. 29). Surely, as job analysis takes on more exactness and reliability, it will require all the rigidity which a scientific training can bring to the work. It is also pointed out that the investigator upon whom falls the main responsibility of the analysis should have considerable ability as a salesman, for he must convert all concerned to a belief in job analysis. He should be capable of meeting easily and intelligently men of all stations—executives as well as manual workers. (3) Finally, the services of a teacher are necessary, one who has had wide experience in teaching the so-called vocational subjects to the class of persons who are going to undertake the subject being analyzed.

THE METHOD OF PROCEDURE

The first thing the analyst must do is to make contact with persons doing the work. This, as was just said, requires great tact and adaptability. The analyst must sell the idea to executives and workers. Having done this, he has next to observe the work in a large way in order to see its broad outlines and its relation to other jobs. The analyst observes the operations involved and lists them just as they come. This first list should then be revised by a 'check.' Indeed a number of revisions will be necessary. These will be based on repeated interviews with workmen, foremen, and other executives. One advantage in using a number of persons for purposes of verification is that one person will think of details which another one forgets to mention. Another reason is that certain occupations are rather poorly standardized. Different practices prevail among different workers and different shops; in particular is the terminology likely to be confusing under such circumstances. Hence, the reason for interviewing a number of persons in order to make a correct picture of the occupation.

It is recommended that an interval of several days elapse between observations and re-checks. This will allow new phases of the work to occur to both worker and investigator, which may be jotted down as they come to mind and later compiled in order.

Some analysts report that they get best results when they actually take a hand in the work themselves and thus experience the 'feel' of it.

Care is usually taken to secure the blanks and forms used on the job.

A. List Essential Information

This procedure refers chiefly to the analysis of the physical operations involved in the work. Another phase, equally important, is to catalog the information required. Theoretically, an analysis which aims to furnish material for a complete curriculum should list all the facts that are necessary to the effective performance of the job. It might be interposed here that, if the vocational curriculum were to contain merely these bare essentials, it would degenerate into a most crassly materialistic and narrow kind of education—one which, if never broadened, would doom its victim forever to a treadmill of the same routine. Second thought would surely condemn such a literal carrying out of this principle. Surely, the curriculum should provide knowledge which will enable the one being trained to advance beyond his immediate job and to progress as years go on.

B. Note Related Knowledge

In order partly to overcome this narrow conception, analysts are advising that note be made of related knowledge, not absolutely necessary to the performance of the work, but nevertheless desirable. It is to be hoped that as the real force of this is seen, it may have a strong influence on vocational education in general. An excellent example, showing how adherence to this principle works, is furnished by the results of the analyses of printing carried on by the United Typothetae of America (18) and by investigators at Carnegie Institute of Technology (16). The curricula finally worked out call for the teaching of 'related subjects,' such as American, Social and Industrial History, Health and Safety for Printers, Design for Printers, Cost Accounting, Advertising, Banking and Credit, Chemistry, Physics, and Psychology. All these subjects, it is easily seen, are related to printing and, while not essential, still are extremely desirable to make an enlightened workman, and especially a type of workman who can be promoted to an executive position.

C. Prepare Definite Written Instructions

After the analysis is made, the operations should be reduced to written form and presented step by step as the learner is to perform them. This written instruction is called the 'operation sheet.' Here is the place where the operations, or units, should be taken from the analyst and re-arranged in the order in which they should be taught. In illustration, we quote a concise description furnished by Haynes:

> ''The lessons [of the Typothetae course (18)] are not arranged on the basis of time, but on the basis of teaching a definite job or idea; some lessons may take fifteen minutes and others from eight to ten hours. Each lesson sheet is printed separately and is intended to be self-teaching as far as possible. It gives to the student the necessary information concerning the job which he is about to perform, then it prescribes definitely his shop practice in a series of carefully graded exercises. At the end of each lesson is a list of questions calculated to prompt him in reasoning out the 'why' of the work which he has performed, as well as to test his mastery of the facts stated in the lesson text. The answers to these questions he is to write out in his notebook. Finally, with most lessons there are given a few references for further reading and study if the student is inclined or has been stimulated to go deeper into the subject.
>
> From the use of instruction sheets prepared and used in this manner certain advantages are expected: the work of the instructor will be systematized and much confusion eliminated, the time of both students and instructor will be conserved. Each apprentice or student may progress individually as fast as he is capable of going without keeping the pace of the whole class; the student receives training in following out written directions, a thing he will have to do in his later vocational life. He is also trained to think and act independently without relying too much on the instructor.''

An advantageous auxiliary to the written instruction may be found in the graphic layout advocated by Bowman (4). Since we are limiting this discussion strictly to job analysis, however, we shall not dwell longer upon the preparation of instruction sheets.

Analysis for Curriculum Building in Different Situations

It is generally agreed that the lessons evolved from the analysis must be flexible, so that in any given course of instruction, units or even groups, may be omitted, added to, or interchanged. In giving instructions to apprentices on a job it might be that certain elements evolved from the analysis could be eliminated as topics of formal instruction. In part-time schools similar elisions might be desirable. In case a worker wished to receive training for a position above the one he is now occupying, the pertinent elements might be chosen from the results of the analysis and concentrated on. In 'try-out' courses, where only a representative sample of work in a trade is to be taught, the appropriate section can be lifted out from among the units disclosed by the analysis. Other variations in the uses of the results of the analysis may be introduced according as the curriculum is being constructed for junior high schools, senior high schools, or vocational schools.

Analysis of Simple and Complex Occupations

As at first conceived as a preliminary to vocational curriculum building, job analysis was thought of almost exclusively in connection with the so-called 'trades' (manual). Even yet, it is thought of by many persons only in this connection. There is coming to be realized, however, a growing feeling that the technique of job analysis may be applied with equal benefits to the so-called 'higher occupations,' perhaps even to the 'professions' (15). Very little application has so far been made of job analysis in these more complex occupational fields. Such applications as have been made here have been directed chiefly towards drawing up job specifications for use in personnel management, rather than for arranging courses of instruction. Nevertheless, the idea of thus employing analysis as the basis of a curriculum for education in the professions is a fruitful one and will undoubtedly receive attention.

In analyzing complex occupations there are several difficulties not met with so pressingly in the more simple manual occupations. In the machinist's trade, for example, there is one phase that remains stable—the physical materials. With such an occupation as selling, however, the materials are not physical; they are human beings, much more variable than inert matter. Still, even in such fields, if an ingenious psychological technique be employed, much can be accomplished. Charters reports the analysis of the job of secretary into 861 duties; an investigation among 715 secretaries disclosed the relative frequency with which each of the 861 duties occurred.

In discriminating between analysis of *duties* and analysis of *difficulties,* Charters observes that the former resist analysis more stoutly than the latter. In analyzing the work of an executive who handles men, it is difficult to set down exactly what the executive does; so many of his actions are semi-conscious and hardly reducible to rules. But the questions: ''Where do executives fail in handling men?'', and: ''What are the differences between a good and a poor executive?'' are more easily answered. Thus 59 difficulties were encountered by salespersons in department stores. These go a great way toward yielding items for the curriculum. Charters observes: ''A difficulty analysis condenses the topics of instruction to their minimal essentials because the difficulties are always less than the duties, except where every duty is difficult.''

A Course in Tile Setting Arranged After Job Analysis

In order to illustrate concisely in a specific trade the application of the methods so far described, a description will be given of the way in which a course in tile setting was arranged. This description is kindly furnished by Mr. Hawkins.

''To assist in the solution of the problem of training apprentices in the tile setting trade, the Associated Tile Manufacturers have prepared a basic course in tile setting. It consists of both shop work and related study. The shop work is arranged in a series of tile setting jobs. Complete instructions are printed separately for each job, thus providing for the student a series of individual lesson sheets completely illustrated with pictures and drawings. The jobs have been determined through a careful analysis of the trade and have been arranged in the order of their learning difficulty. The related technical study is based on the shop work and directly related to it. The plan of the course is to give experiences to which theory and technical information will be related.

To meet the needs of practical tile setters who have little or no experience in teaching, an *Instructor's Guide* has been prepared. It includes a discussion of what to teach, how to teach, instructional devices, the lesson, interest, grading students, and specific suggestions concerning each job in the course.

An analysis of the trade was made by consultation with a number of experienced tile setters and tile contractors who were previously tile setters. After the trade had been analyzed into a series of work jobs, these jobs were arranged in the order of their learning difficulty. For the basic course to be used in pre-employment training, those jobs were selected which formed the basis of most of the average run of work in the industry. The text material for this basic course was prepared in the following manner.

An experienced tile setter and a man familiar with the industry, inexperienced in tile setting, but able to express himself in clear, forceful English, were selected to assist the Director of Education in the preparation of this material. The tile setter first described the job, and directions for performing the job were then written out. The tile setter then performed the job and the text was corrected through observation of his work. The man who had written the text of the lesson then took his own text and worked it out under the observation of the tile setter, corrections being made where the directions were faulty or insufficient. This process was followed throughout the preparation of the course, involving the following steps: (1) Description of the job by the tile setter; (2) Performance of the job by the tile setter; (3) Performance of the job by an inexperienced man under the direction of the tile setter.

After the lessons had been prepared, the material was submitted to a group of experienced tile setters for corrections and suggestions. A group of seventeen apprentices were then selected from several different cities and sent to Dunwoody Institute for a three months' intensive course, using the basic lessons as their text material for both shop and related work. The tile setter and the instructor who worked out these lessons were in charge of the instruction, and the directions and descriptions were revised as the experience of the class showed revision to be necessary. This class was conducted for the purpose of trying out the course. Copies of the course are now available for instruction purposes. (Address, The Associated Tile Manufacturers, Beaver Falls, Pa.)''

TECHNIQUE OF EXPERIMENTAL PSYCHOLOGY IN THE SERVICE OF JOB ANALYSIS

The next step to take after making these practical analyses is to make the analysis more intensive, to state in still smaller units what the learner of a given trade must learn, and how he had best learn it. This has been recognized to be a psychological inquiry, and to its prosecution the energies of psychologists have been invoked.

This undertaking must be marked by the employment of the most rigid scientific method. That is, psychology, in attacking job analysis, must employ the experimental method characteristic of all science: to state its problem very clearly; to arrange conditions so as to deal with but one thing at a time; to observe this one thing a number of times; to record what is observed, so far as possible, in quantitative terms; to tabulate all figures in orderly array so that they may be readily perceived and understood; on the basis of these results, to draw conclusions.

As for instruments and apparatus, they will vary with the problem. Some may be elaborate, others as simple as a stop-watch or a slide-rule. Measurement is our aim, and the simpler we keep our tools of measurement, the more likely we are to use them successfully.

A. Scientific Analysis of Typewriting

One who desires to make such psychological analysis of a trade or job to-day will not be traversing wholly unbroken ground. For, more than twenty-five years ago, certain far-sighted psychologists set up sign-posts. As long ago as 1893, long before the term 'vocational education' came into its present popularity, Bryan and Harter conceived the idea of investigating the psychological processes involved in learning telegraphy. Following the scientific procedure just formulated, they discovered the rates of receiving and sending that could be attained at the end of four, eight, sixteen, etc., weeks; the places where the greatest difficulties occur and the causes of some of these difficulties (5). About ten years later Book made a similar study of the acquisition of skill in typewriting (2). Wells, in 1916, studied the psychological factors that enter into the work of a finished typist (19). Since these studies in the field of typewriting illustrate so well the scientific method that must be followed in applying psychology to the work of job analysis, some of their results will be briefly noted.

The phases of typewriting that have been most thoroughly investigated are these:

1. The stages through which a learner must pass on the road to the acquisition of the requisite skill.
2. The times required for doing the various operations after skill is attained.
3. Listing and analysis of the difficulties to be encountered (a) in expert typing, (b) in learning to typewrite.

To speak in greater detail, there have been found to be three stages in the learning of typewriting. First a stage of letter association, when the learner must spend his energy and focus his attention chiefly upon associating letter with key, and letter with finger, and finger with key. Next, a stage when letters group themselves into words. The word becomes the unit; the learner begins to think, not of individual letters, but of groups of letters forming words, all the while thinking in terms of typewriter keys and finger movements. Then comes an 'expert' stage when the unit is not the letter or even the word, but the phrase or clause or even sentence. Indeed, writing at this stage becomes practically continuous. There is an unbroken stream of skillful movement.

Another phase to which investigation has been directed is the accurate measurement of the times required for the several operations involved in typewriting. Some of the measurements read this way:

1. Time required for a single stroke in errorless typewriting, 160 thousandths to 180 thousandths of a second.
2. Time required for carriage return, .87 to 1.28 seconds.
3. Time required for back-spacing and back-space strikeover, one second—as much as that required for five or six strokes.

An interesting demonstration has been made, in this connection, of the nature of the waste motions which can slow up the carriage return. "One operator brings the thumb against the hook in the lever and pushes it back with a single extensor movement of the arm; the other grasps the lever with the fingers, giving it a distinct twist. These latter motions result in a decrease of some 33 percent in total typewriting speed, not to mention the additional muscular strain put upon the arm" (19).

The investigations which have been made of the difficulties of the learner have resulted in charts showing the speed which a learner may be expected to reach at the end of one, two, or three months, and the number of errors which may be expected at each of these periods. (These charts are available in Book's report, p. 20.)

Considerable investigation has centered around the retardations that usually occur. When the learner is retarded in his progress—when, in technical parlance, he is on a plateau—the method of analysis may throw light upon the causes for retardation. Analysis shows that these retardations usually come at some 'critical stage.' And the psychological situation at such times is characterized by lapse of attention, slighting of details, forgetting of instructions, diminution of interest. The learner grows discouraged or lazy, or impatiently tries to go ahead without laying a foundation of essentials.

Now, the learner is usually ignorant of the cause of his lack of progress. And if he should by chance discover it, he would not know how to overcome it. Here is the opportunity supreme for the wise analytical pedagogue. For, by means of analysis, he may discover the difficulty, may point it out to the learner, and prescribe the remedial measures. The example just cited shows the interesting fact that the service which the instructor will render consists not alone of giving technical aid; it may involve as well the arrangement of emotional aids to the jaded interest, and the provision of inspiration to renewed effort (3).

Another interesting phase of typewriting is the analysis of errors and the investigation of their causes. They fall naturally into four groups: omissions, substitutions, transpositions, and additions.

An example of the first is the writing of the word *familiarity* without the *m*. The key may be struck so lightly that it does not make an impression, or even move the carriage along. A typist often manifests a tendency habitually to omit a certain letter, such as *a, s, r, m, t*.

An example of substitution is the substitution in the word used above, of *k* for *m*. A typist often manifests a persistent tendency to substitute a certain letter for another, such as *j* for *h, z* for *x*. Any intelligent teacher may, by a little statistical investigation, discover such tendencies, direct the attention of the learner to them, and take the necessary steps to avoid them.

An example of transposition is writing "ture" for "true," "parise" for "praise."

An example of addition is the writing of "tripe" for "trip."

These lapses should not be treated as unaccountable accidents. To the scientist nothing is an accident. There must be a cause. We shall not go so far as to invoke the overworked Freudian hypothesis for an explanation of these lapses; but we shall aver that they come from some factors of which the learner may be ignorant—perhaps technical faults, such as "dropping of the hands out of alignment, or directing the finger positively toward a wrong key,'' or ideational or emotional interferences. Whatever the causes, analysis is the technique that must be employed to isolate them, and the point of departure from which improved methods of instructions must start.

B. Measurement of Eye-Movements of Proof Readers

A more recent application of the technique of experimental psychology to the problem of job analysis has been made by the writer in the field of proof reading. Eye-movements—one of the most important operations in proof reading—were examined in order to determine what were the characteristic form, rate, and regularity of the eye-movements of good proof readers. For purposes of contrast, the eye-movements of poor proof readers were also examined.

As has been shown by several investigators, reading proceeds by means of a number of jumps and pauses on significant portions of words. Measures of the extent of these jumps and the length of the pauses are obtained by means of a moving photographic film upon which is photographed a ray of violet light reflected into and out of the reader's eye. This light is interrupted every fiftieth of a second by a tuning fork vibrating at that rate. Thus the eye-movements record themselves on the film as a series of small dots, each representing one fiftieth of a second. Table I shows the average number of pauses and the average length of pauses in fiftieths of a second, made by good and poor proof readers while reading five lines of matter.

Table I.—Eye-Movements of Proof Readers

	Average number of pauses per line	M.V.	Average length of pauses	M.V.
Good	7.4	.48	17.1	1.66
Poor	11.0	2.00	19.3	3.64

From these results comparisons may be made as follows:

1. A good proof reader, reading the kind of material used in the investigation, makes, on the average, seven pauses per line.

This is the standard that might be set up (for this kind of material) for the attainment of a new proof reader.

2. A good proof reader, on this kind of material, pauses each time, on the average, seventeen-fiftieths of a second.

3. A still more important fact is that a good reader generally makes pauses of about the same length. That is, he is regular in reading; this is shown by the small mean variation, which is 1.6-fiftieths of a second (11).

Advantages of Exact Scientific Measurements

It should be clearly understood that this particular application of psychological technique to the analysis of a job does not pretend at all to completeness. Its contribution to the building of a curriculum for education in printing such as that outlined by Mr. Haynes is only slight. Nevertheless, such careful and minute study of the work done by expert workers in a trade will furnish facts which can be incorporated within the curriculum. Pushed further, as in the occupation of typewriting discussed above, it may reveal the difficulties which at various stages of the learning process will beset one who desires to learn a trade, and thus permit the instructor to institute preventive measures. It will furnish correct qualitative standards showing exactly what must be done in the occupation. It will also furnish quantitative standards showing just how fast and accurately the operation must be performed.[4]

A very desirable outcome of this scientific analysis is that it gives measures in minute terms. Surely, as methods of instruction in occupations become more and more highly advanced, it will be desired to instruct in the finer points of the occupational processes, for all of which this minute analysis will be a requisite.

Most important of all is the fact that this scientific method of analysis gives results that are valid. They deal not with opinion, but with measured fact. They permit one to say: "I know." And thus they constitute reliable foundation stones on which to build a curriculum.

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[4] In this connection it is pertinent to prophesy that the time is soon coming when there will be a demand for educational (attainment) tests in the subjects of the vocational education curriculum analogous to those in such subjects as arithmetic, handwriting, and the like, and that as a preliminary to the invention of such tests, the quantitative analytic method is indispensable.

Of course, the effective development of this method of minute and exact analysis will require time and the co-operation of a great many persons—psychologists, teachers, and workers in the occupations. Awaiting this, there is still much work that should be done along the lines of the larger analysis described in the earlier sections of this report. The excellent models already furnished by investigators in certain trades should be followed in other trades.

Other Ends of Job Analysis

All the while it should be remembered that analysis of trades and jobs is being made by others than those interested merely in vocational education. It is regarded by vocational counsellors as a prerequisite to intelligent vocational guidance, for only after knowing the components of an occupation can one advise an individual regarding his probable fitness for it. Personnel managers in business establishments, in their dual capacity of vocational guidance and selection, also use job analysis in making out the job specifications through which they employ their workers. A newer use, which has come into recognition since the war-time burst of enthusiasm for personnel work, is connected with the grading and routing of jobs for the sake of rating and promoting workers.

As suggested before, job analysis is an indispensable prelude to the construction of a trade test, for only by charting the components of a job can a test be prepared that measures proficiency.

On the side of production in industry, also, analysis is regarded as of paramount importance. Through it comes the discovery of wasteful operations, some of which are connected with machinery, others with the worker. In the case of the latter, fatigue may be reduced and exposure to dangerous accidents may be minimized.

It is likewise useful in the setting up of standards of performance—the standard day's task—and the establishment of equitable wage scales. It may be used in the accurate computation of costs and the estimation of new contracts. In short, all the ends which have been served by time and motion study in industrial management may be served by trade and job analysis.

In spite of the fact that they are not immediately directed toward the problems of curriculum building, the results attained by analysis made for these various purposes are quite readily applicable by a teacher of the trades. An instructive example of this comes from the experience of the British Industrial Research Fatigue Board, which was organized during the war to promote better knowledge of the relations of hours of labor and of other conditions of employment, including methods of work, to functions of the human body. Among the industries in which investigations were carried on was that of chocolate dipping. Investigation showed that certain wasteful and fatiguing operations could be replaced by others more economical and less fatiguing. The newly-discovered co-ordinations were then embodied in a training scheme, according to which new operators were instructed. Thus the analytic study, though started for a different purpose, pointed the way to more efficient methods of instruction in the trade (9).

JOB ANALYSIS A CONTINUOUS PROCESS

No job is ever completely analyzed. Practically all investigators agree on this. Occupations are evolutionary in their nature. New ones are arising; others are dying off; new processes are being invented, new machinery and new materials. Accordingly, the ideal that should guide the analyst is: there is always room for improvement in methods of work; there are always new facts to be discovered; there is always room for improvement in methods of learning.

SUMMARY

This discussion has aimed to furnish a brief statement of what job analysis is; how it is carried on and how its results are used in vocational curriculum building. It has cited several successful attempts that have been made by the best methods of gross analysis available. It has pointed out that a still more minute analysis remains for future development and has cited examples devoted chiefly to a study of psychological factors. Attention has also been called to the fact that job analysis is being used for purposes other than curriculum building, and that from these related studies may come discoveries of great significance for the teaching of vocational subjects. Though the treatment of all these phases has, of necessity, been brief, it is hoped that enough has been said to inspire teachers and investigators in the field of vocational education to take a broad view of job analysis, to keep closely in touch with its various phases, to study and apply the available reports on the subject. Only so can they elevate the acquirement of vocational skill from the plane of wasteful undirected learning to that of effective directed activity which is the ideal of the modern demand for the scientific study of education.

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CHAPTER IV

INDIVIDUAL INSTRUCTION IN THE VOCATIONAL SCHOOL

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Introduction to the Problem

Present-day thought and practice in the field of elementary and secondary education are distinctly in the direction of adapting subject matter and procedure to the pupils' individual needs and capacities. To verify this, it is only necessary to note the contents of the programs of the various educational conventions or gatherings or to glance through the announcements of regular or summer courses in the many schools of education.

The junior high school is one of the foremost of the numerous institutions attempting to offer diversified curricula. Its steady growth is due to a recognition of the fact that public education can no longer be extended in terms of formalized mass education but must be developed in terms of the needs of individuals. Hence today there is found, usually beginning at the seventh year, a school organization that provides for the needs of both sexes—a departmentalizing of the school program and an offering of elective courses in several fields. The function of a well organized junior high school is to introduce the child to the occupational world in a comprehensive manner, to assist him in determining his future occupational activities and to bring to him that kind of an education that will help him directly and indirectly in his future occupation. This movement in education not only comprehends the child preparing for college, but it also offers educational opportunities for those not so fortunate who must enter early upon wage earning careers in industry, commerce, agriculture, or homemaking.

The recent movement towards applying educational measurements and tests to school children is another indication of the trend of educational development. This scientific testing is an effort to classify and sort children into groups according to like capacities, desires, and interests. The proper classification of pupils will enable teachers to offer the instruction that will be of most benefit to groups having varying abilities and interests. It will pave the way for special classes for subnormals, other classes for those of average ability, and still others for the very bright individuals. All these efforts point to very specific tendencies in educational progress. These tendencies are all parts of a movement to provide in the most effective way instruction and guidance for the individual child. The trend of thought and practice is away from thinking in terms of many hundreds of children and toward the needs of this child and that child.

Vocational education is a phase of education that offers an unusual opportunity for the development of procedure and practice that will serve individual pupils. The comparative newness of vocational education and its consequent lack of traditional practices is a decided advantage to those teaching in this field who are attacking the problem of organizing and using individual instruction material. This is especially true in the case of the continuation school problem, where the need for such material is acute. The success of the continuation school is dependent upon the effectiveness of individual instruction. Vocational teachers have an opportunity for pioneering in educational procedure that will eventually modify and improve all classroom technique.

The discussion which follows deals with the continuation-school problem. It illustrates a practical, present-day situation with its numerous organizations and instructional problems. Implications should be drawn during the entire discussion to similar problems in the junior and senior high schools, in the evening schools, and in the elementary grades.

The Continuation School — An Example of the Problem of Individual Instruction

A. An Analysis of the Predominating Individual Differences

Chronological age and physical condition. The continuation-school boy and girl range from 14 to 18 years of age and in many instances have their full physical stature. They are no longer children and should not be considered so from the physical standpoint. All degrees of soundness of physique will be found among their number, as will be found in any other large group of people.

Mental age and ability to learn. Within every continuation school will be found students of different degrees of mental ability. It is true that this condition also prevails in the full-time school, but not to the degree to be found in the continuation school. The student who is not able to make progress, the pupil whose financial aid is needed in the home, the large numbers that have lost interest in the regular school work, all pour into the continuation schools.

School experiences. Among the numbers of young people appearing for further instruction in the continuation school will be found those with a fourth-grade education; others with one, or two, or three years of study in the high school; some with two or three years of work in the school shops or laboratories of commercial classrooms; others with an elementary-school education received in a rural school where opportunities for work in the special subjects were not available.

Places of employment. The boys and girls in the continuation school are scattered broadcast through the occupational activities of the community. Some have selected wisely, but the majority have done so blindly. Many of their jobs have avenues leading up and on; others have the most limited occupational opportunities. Diversity of occupation among the membership of the continuation school must receive recognition.

Home conditions and environment. The mark of home and the environment is upon every child in the school. A diagnosis of the membership of any school or class readily discloses that the problem of treatment is not a mass undertaking, but an adjustment of individuals. They do not all need the same instruction in English, in mathematics, in personal hygiene, or in any other subject at the same time.

Irregular periods of entrance to the continuation school. The membership of any continuation school is not stable. The receiving and discharging of students is constantly in operation. This condition affects the membership of individual classes and adds to the responsibilities of the teacher.

Interests and aptitudes. Interests and aptitudes among the working boys and girls attending the part-time schools are more divergent than in the elementary school and decidedly more pronounced and evident than in any of the full-time schools or classes. These young people are not as amenable to accepting mass instruction as the full-time students, nor is it desirable to attempt to offer instruction to them in that manner.

Summary. The fact that these boys and girls are not in attendance upon full-time instruction is clearly indicative that the instruction offered in the full-time school under the older methods has not been entirely successful. Is it not rational to draw the conclusion that the status of these children, approaching maturity, observant, and alert to all the activities in the community about them, their personal ambitions and desires giving vent to individual expression, points to a real need for a general overhauling of classroom methods and the placing of the emphasis on the individual needs?

Further, is it not rational to assume that the facts that children in the continuation school are less homogeneous that the children in the full-time school; that there are greater differences in chronological age and physical condition, mental age and ability to learn, school experiences, kinds of employment, home conditions and environment, irregular periods of entrance to continuation school, interest and aptitudes—that all these conditions point to the imperative necessity for individual guidance and assistance?

B. Classification of the Pupils

The grade completed as the basis. The grade completed in a regular school is not a safe basis for the classification of pupils in the continuation school. The wide variance of standards on the part of teachers in grading makes this grading unreliable and therefore not desirable for use in the continuation school.

Employment as the basis. Occupations in which children are employed that have educational and promotional opportunities offer one of the most effective bases for classification. This method will group children of similar major interests and provide a form of motivation that will insure progress.

Tests and mental measurements. These devices are being used very effectively to determine certain distinct abilities. The application of this scientific method is doing much to secure a homogeneity of classes, and as a result, more effective teaching.

Summary. Mental tests, measurements, the previous school record, and the use of occupational information are invaluable agencies in the problem of classification. Added refinements and perfected technique in the use of these agencies still leave with us the problem of the individual with his multiplicity of interests, desires, ambitions, and special aptitudes. Scientific classification has but one major end and that is—teaching that reaches and serves the needs of individual pupils. The individual must not be submerged; he must be the unit for whom all instruction is organized and given.

C. The Subject Matter of the Continuation School Curriculum

1. *The Occupation as a Partial Source of Subject Matter*

A major portion of the subject matter may be very effectively developed from the various occupational fields. This subject matter will embrace not only the manual aspect, but also those phases of English, civics, hygiene, mathematics, history, economics, drawing, and design that may be naturally correlated. This method of approach to the interests of the working child brings very vividly to their attention the fact that the instruction in a continuation school is very different from the instruction in the full-time organization.

2. *Individual Needs of the Working Children*

Attention has been called to the range of variability existing among the pupils of every continuation school. In the face of this situation can we continue to ignore the fact that each child needs assistance in his place of employment, that each needs in varying degrees assistance and help in matters of health education, use and appreciation of the English language, use of the simple mathematical computations, and a working knowledge of the civic and social duties and responsibilities? Any assumption that all children need the same instruction at the same time in any continuation school is a fallacy and without pedagogical foundation of any kind.

3. *The Interest Factor in Continuation-School Instruction*

The majority of children in attendance upon part-time schools have left the full-time classes at the earliest possible legal age. A fundamental reason for this elimination is lack of interest. If the full-time organization failed to a large degree to secure the interest of the adolescent boy and girl, is it wise to proceed along similar lines in organizing and offering instruction in the newer field? Have we not had one of the most vivid illustrations of what mass instruction will accomplish? Are we to follow the method that we know was successful in eliminating pupils, or are we to profit by the experience of the full-time school and develop subject matter and a method of instruction that are primarily and fundamentally based on individual needs and interests?

4. *Present Text Material Not Suitable*

Existing texts and reference materials are not adapted in their present organization for the most effective use in continuation school classes. The material itself is entirely reliable, as far as it goes, but is not in the form that sets the part-time school pupil at work, holds him to it, and is immediately usable in a civic, social or economic way.

5. *Type of Subject Matter Best Adapted to the Unit Instruction Organization*

All subject matter lends itself very readily to organization in the form of units of instruction. The only debatable issue is where and under what conditions the units of instruction may be used most effectively. Experience in the use of this form of organization indicates that it may be most effectively used with an entire class when the subject matter is general in character and not dependent upon material that precedes or follows. The subjects of civics, social relations, hygiene, and phases of every vocational subject that are general in character are examples.

Subject matter of any kind that is dependent upon mastery or knowledge of preceding units lends itself to an organization and use with individuals or small groups. All forms of shopwork or laboratory instruction in home-making, industrial and commercial subjects, and much of the instruction in mathematics and English may be most effectively organized and taught through the medium of units of instruction used with the individual pupil or small groups of pupils.

6. *Summary*

The subject matter in the continuation schools cannot be the same material that is offered in the full-time schools. Many of the children left those schools for the avowed purpose of avoiding the existing type of subject matter and the existing methods of teaching it.

The young wage earner's employment and his immediate surroundings should be the source from which much of the subject matter taught in the continuation school will be drawn. This source will provide material that possesses interest and a very large measure of immediate usefulness.

Few existing textbooks have been prepared to provide that kind of instruction, and consequently there is need for preparation of much new material or a re-arrangement of existing subject matter.

D. The Teaching Problem in the Continuation School

1. *Principles of Teaching and Their Application in the Continuation School*

Teachers of special subjects in the curriculum would have us infer in numerous instances that the accepted principles of teaching do not apply to their practical field. This point of view is in total disregard of the fact that *principles* are common to all subjects, and that it is *method* that may vary with the different types of work.

Furthermore, it must be recognized that if principles of teaching are worthy of consideration in giving class instruction, they are equally worthy and necessary in connection with individual or group instruction. Many attempts have been made in the past and are constantly being made to-day to use individual methods of teaching without observance of the most fundamental of principles. This was undoubtedly one of the major causes for the failure of the individual method in commercial education that was advocated a number of years ago. It failed because the teachers did not know and use the most elementary principles of teaching with the individual members of their classes.

2. *The Distribution of Pupils in Classes According to Ability*

Every educational study ever conducted to determine the achievement and progress of pupils in school subjects has shown that within each class there is a grouping that follows approximately a normal distribution curve. This variation is absolutely disregarded in many classrooms; the common practice is to offer instruction to the class as a whole. Under this method from one-fourth to one-third of the students are not receiving the instruction from which they will derive the greatest profit.

In a continuation school the range of variability is marked. It is only necessary to recall the predominating individual differences previously mentioned to gain an idea of the actual situation confronting almost every continuation school teacher. Teachers in full-time classes may be able to disregard the twenty to thirty percent of their pupils because it is the traditional procedure, but this cannot be sanctioned in any continuation school. Every hour spent by a pupil in a continuation-school classroom should be a full sixty minutes of profitable and appreciated educational progress.

3. *Abilities of Pupils and Class Instruction*

The traditional practice of 'spraying' instruction on a class as a whole is too well known to need extended elaboration. Every teacher recognizes and knows from experience that it is impossible to keep the members of any class together. They may start out together on a new subject on a Monday morning, but by Friday night there will be found distinct groups from the standpoint of progress among the members.

In the face of this situation the teacher must adopt a method of procedure that will reach each member of each of these groups. Teachers will find that running through every school subject, and this is especially true of the vocational subjects, there is a core of general subject matter, many parts of which can be offered to a class as a whole. This suggestion, carried into practical application, means that there is a place, probably at the beginning of each class period, for a short, well-planned, general class discussion of a small portion of the core of subject matter.

Teachers should not be deceived about the class discussion and for one moment believe that the working boys and girls in the part-time classes are especially interested in a lecture by the instructor or a recitation by some three or four members of the class. These students are keenly discriminating and will be satisfied only when they receive instruction that they know is of immediate benefit to them.

4. *The Factors of Interest and Self-Activity in the Continuation-School Classroom*

The interests of the individual pupil are the basis of his educational progress. A pertinent and proper question is: do we get the interest of the individual pupil when problems are discussed that do not touch his life, that are too far advanced or too elementary? Inability of the pupil to see and appreciate the value of the daily instruction in terms of his own situation means ineffectual instruction.

Students are most interested when they are at work upon their own personal problems, and this is especially true when these problems are presented to them in the form of challenges that set them upon their mettle. The pupil attains to knowledge, not by having it forced upon him, but by taking it of his own volition. He should be constantly encouraged to instruct himself and work independently. The teacher is the co-operator and remover of insurmountable difficulties only and should resolutely endeavor to render his services unnecessary. This is especially applicable to all of the instruction offered in a continuation school or class.

Accepting the most basic of the principles of teaching—that interest is the compelling personal force that sets the individual at work and that it is only through self-activity that individual growth and development is brought about—how may the use of class instruction that reaches only a part of any class be justified as an effective method of teaching?

5. *The Group Method of Teaching in the Continuation School*

Organizing the class on the basis of groups made up of pupils whose interests and capacities are somewhat similar is the first step toward meeting the specific needs of the individual members of the class. This method will enable the teacher partially to observe the fundamental principles of teaching.

The average classroom teacher sees in the group method of instruction an impossible teaching situation. How is it possible to keep three, or four, or five groups within one classroom profitably employed? It is granted that, with the present organization of teaching material, it is an impossible task. It is absolutely necessary that instructional material be so prepared that each of these groups will progress as rapidly as it profitably can, remembering that group progress is nothing less than the progress of each pupil in the group.

6. *The Individual Method of Teaching in the Continuation School*

Public funds are provided, schools established, and teachers employed for the distinct purpose of preparing the individual to meet his daily responsibilities in a democratic society. This means that the individual is the unit for whom the organized instruction should be prepared.

This standard will require that each teacher know the facts concerning each pupil and on that basis prepare and offer the instruction that is needed to bring the student in closer accord with the civic, social, and economic demands that he is called upon to meet. This means that each pupil's deficiencies are being lessened, his aptitudes are being developed, his desirable interests encouraged and, in general, right habits are being firmly established.

Under this method of instruction the pupil realizes the presence of the personal element. His identity is not submerged and lost in the mass. With this realization of individuality comes a consciousness of the value of the instruction, and an interest in the subject matter because it touches him, and, finally, the self-activity that results in development and growth.

Mass instruction has not brought this about for all pupils. Is it still desirable to employ exclusively the method that is known to have failed with many, or is it timely to consider such modifications of our methods as will more nearly serve all?

7. *Summary*

The principles of the teaching-learning process are equally applicable in all instruction, whether vocational or general. The stimulation of interests, the meeting of needs, and the development of abilities is not a mass problem, but one of individual boys and girls. Class instruction will not serve most effectively in the continuation school, nor will group instruction fully meet the established standard. To present that kind of subject matter and to employ that method that will make an immediate appeal and secure an involuntary response is the standard of instruction to be attained.

E. The Unit Instruction Method in the Continuation School

1. *Defining the Method*

The factors and conditions confronting the teacher in a continuation school have been presented somewhat in detail. The limitations of certain methods and the non-adaptability of others have also been developed in the light of the continuation-school problem. This immediately leads to a consideration of the methods that can be employed that will assist in meeting the instructional demands of the continuation school. These instructional demands are neither fanciful nor remote, but decidedly in our midst. Face to face with this insistent demand that the instruction in our continuation-school classes shall be more effective than that offered in full-time classes, the unit instruction method of teaching was evolved.

The unit instruction sheet is distinctly a teaching agency to supplement the efforts of the teacher and in no case should be used to supplant the instructor. It is one unit of a body of organized teaching material that has been prepared for pupils to use under conditions that will insure the greatest amount of directed individual progress. It is specifically an agency that provides educational work for the pupils, according to their varying abilities and interests, for the duration of a class period. It is a means of attaining ''self-education through purposeful activity.''

The unit instruction idea and the unit instruction sheet are not presented as new ideas. The entire plan in one form or another has been a part of good educational practice for a great many years. The form under discussion is a composite development and represents the best of the instruction methods employed by the correspondence schools, the best practice used in school science laboratories involving the use of manuals, and the idea of the factory job sheet. A fusion of certain elements of all three plans, together with an observance of pedagogical principles, resulted in the present idea of the unit-instruction sheet.

The unit instruction idea is not a device, but distinctly a method of teaching. Neither is it a teacher's lesson plan, but an assignment of selected educational problems to be placed in the hands of the pupil for solution. Under this method of teaching, every boy and girl progresses as rapidly as ability will permit. The teacher does not find it necessary to have recourse to that 'marking time' device, the supplementary assignment. It is not advocated that all group or class discussion should disappear under this plan, but whenever it is used, the teacher should be certain that each member of the class or group will receive full benefit. Using this standard in a critical way will almost entirely eliminate the present form of class teaching. Under these conditions, a unit instruction sheet might be used with an entire class or with groups.

2. *Essential Aspects of the Unit Instruction Method*

The unit instruction sheet is the student's assignment of work. A most important factor on each sheet is the statement of the objective of the unit. It must be so worded in the language of the pupil and in such a clear and concise manner that it is readily comprehended and results in the taking up of the assignment without loss of time.

All assignments placed on the sheets must also be very specific and carefully worded. The assignments should be of such a nature and in such form as to result not only in doing, but also in thinking. An observation of this principle will eliminate any tendency to prepare factory job sheets.

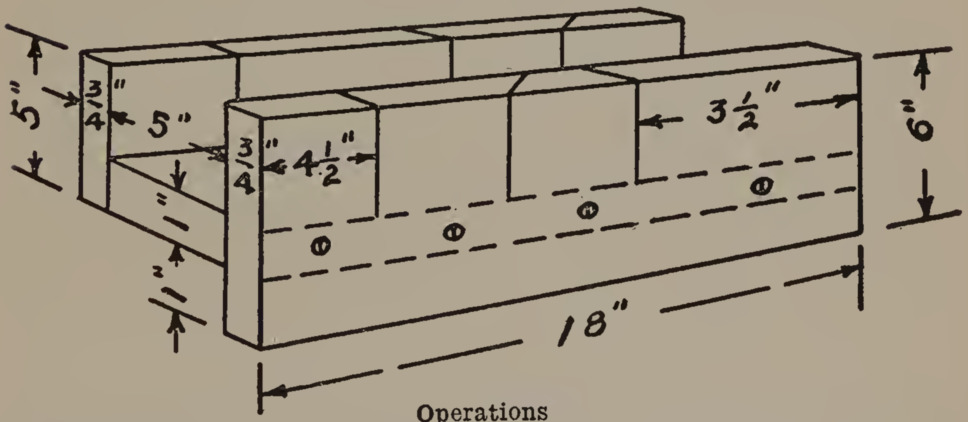
First instruction sheets placed in the hands of students may properly be rather specific, but succeeding sheets should be so prepared as to require the student to assume the responsibility for working out his own procedure. Yet teachers should not permit students to guess at procedure, but should always be available to render the necessary assistance. Assignments to sources of information in text and reference material should be a part of every unit instruction sheet. The type unit instruction sheet that follows illustrates the essential features of the method.

UNIT INSTRUCTION SHEET
PART-TIME OR CONTINUATION SCHOOL

Course: Building Trades—Carpentry, Unit No. 2

Objective of the Unit

Assemble the miter box and make the 45° and 90° cuts.[1]



Operations

Assignment for student. Prepare for your note book the list of processes necessary to perform each of the following operations and have the approval of the teacher before proceeding:

1. Locating centers of screw holes.
2. Boring and countersinking screw holes.
3. Assembling sides and bottom.
4. Laying-out the 45° and 90° cuts.
5. Making the 45° and 90° cuts.

Read: *Trade Foundations*, Section IV, par. 17, 18, 20, 21, 54, 55, 57.
Essentials of Woodworking, Ch. IV.

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[1] The preceding unit involved the dressing of stock to dimensions.

Related Drafting

1. Make a complete three-view mechanical drawing on 9"x 12" drawing paper of the miter box using a scale of 3" to 1 foot.
Read: *Mechanical Drawing for High Schools,* pages 3, 4, 5, 6, 7.

Trade Science

Prepare for your notebook:
1. Explain briefly what is meant by plain sawed lumber; quarter sawed lumber.
2. Explain the effect of the method of sawing on the warping of lumber.
Read: *Trade Foundations;* pages 185, 186.

Vocational Guidance

Prepare for your notebook:
1. Explain how people learn the trade of carpentry.
2. What does an apprenticeship mean to you?
Read: *Trade Foundations;* page 83.

Trade Mathematics
Preliminary Drill Problems

Note: The drill problems are prepared for the students not ready to take up the job problems.

1. Give the decimal equivalents of the following:
1/16"; 5/16"; 9/16"; 13/16"

2. Add the following dimensions as found on the rule:

1 3/16"	6 7/8"	4 5/16"
2 5/8"	5 7/16"	4 3/4"
	7 11/16"	
	4 3/4"	

3. Subtract the following dimensions:

1 15/16"	6 7/16"	7 3/4"
1 1/4"	5 15/16"	3 13/16"
	11 1/4"	
	7 5/16"	

4. Divide the following dimensions into equal parts:
10½" divided by 6
9¾" divided by 3
7⅞" divided by 5

Trade Terms

Place in your notebook the meaning of the following terms:
1. Assembling
2. Countersinking
3. Toe-nailing

Tools and Materials

Prepare for your notebook:
1. Five important facts concerning basswood.
2. Name three tools that may be used to lay out a 45° angle.
3. Why is it always desirable to bore the holes for a screw slightly larger than the diameter of the screw?
4. What does the term, 1½", number 10, flat head, bright wood screw mean?
Read: *Trade Foundations;* pages 198, 290, 291.

Job Problems

1. Add the different dimensions on the width of the miter box and give the over-all width.
2. Four screws are used on the sides of the miter box, the first ones are to be placed 2¼" from either end; how far apart will the others be if spaced equally?
3. If the cut for the 45° angle is started 3½" from one end of the box, how far will the cut be from the end on the other side of the box under construction?

Safety and Hygiene

Prepare for your notebook:
1. Why is it dangerous to pass a finger over the head of a screw after it has been driven home?
2. Enumerate five things that you are doing to keep in good physical condition.
3. Indicate three more things which you should be doing.

English

Preliminary Drill Assignment

Note: To be used where student is not ready for regular work.

1. Study each of the correct forms below and write a sentence containing it.

Correct Use	Incorrect Use
I did	I done
They did	They done
They were	They was
We saw	We seen
The boys saw	The boys seen

Regular Assignment

Read: ''The Toll of Big Timber'' in *The Worker and His Work,* pages 141-146, and prepare a written description of approximately 200 words of the felling of one of the large trees.

Civics, Industrial and American History, and Economics

Note: This suggested material should be used for class or group discussion.

1. Name and discuss three provisions that the State has made for the welfare of young workers.

2. Discuss in detail the reasons for the State enacting laws to provide for the welfare of young workers.

3. *Responsibility of the Teacher*

The unit instruction sheet is specifically for the purpose of supplementing the efforts of the teacher, thus freeing him to render greater assistance to individual members of the class. The sheets cannot be distributed to students in an indiscriminate manner, but should be allotted on the basis of their individual needs, which have been very carefully ascertained at some previous period. Meeting the needs of individual pupils does not mean the preparation of individual sets of instructional material in every case or even in the majority of cases. The classification of pupils into groups on the basis of individual needs will enable the teacher to rotate sheets successfully. Following the distribution, the teacher then has the problem of individual teaching, close follow-up of each student, careful checking of results, and a recording of accomplishment.

4. *Summary*

The primary purpose of the unit instruction method is to provide, through carefully organized and planned assignments of educational work, in terms of individual needs, interests, and aptitudes, for the fullest possible progress of each boy and girl without undue loss of time or effort. It is not planned for use in starting an entire class together or for use in attempting to keep them together. It is planned entirely with the realization that the boy or girl is the unit of instruction.

F. General Summary

1. *The Continuation-School Pupil*

He is a child in many ways, but as a wage earner he is daily encountering experiences beyond his years. He is commencing to know and appreciate the value of education and special training; he knows his own shortcomings, and knows when he is getting what he needs. He is more discriminating and exacting in his demands than the high-school child; he is not like every other child in the continuation school and refuses to be made so. The sooner the continuation school finds out his needs and administers the treatment that his needs require, the sooner will the movement be on a firm foundation.

2. *The Subject Matter of the Continuation-School Curriculum*

Recognition and acknowledgment of the range of individual differences among the pupils of every continuation-school forces an organization and preparation of teaching material that will immediately meet the individual needs. Occupation, physical and mental condition, interests and aptitudes are all factors that must be considered in the subject matter for each boy and girl. Few texts and only a limited amount of reference material are available to serve the needs of these children. It would be extremely unwise and unfortunate to attempt to shape the instruction around existing material. The immediate problem is to collect the available facts from every source and organize them in such a manner that pupils will be able to use them with interesting and telling effect.

3. *The Teaching Problem in the Continuation School*

The question should be immediately raised: are we in accord that it is the business of the continuation school to provide such instruction as will permit each individual pupil to progress as rapidly as he is able and that four hours of attendance upon classes shall be a full 240 minutes of needed and usable instruction?

If this objective is accepted, will the results of many scientific studies also be accepted that show that within every class there is a distribution of ability and achievement that follows approximately a normal distribution curve? If this condition exists in the full-time classes, it is known that the diversity is much more extended in the continuation-school classes. In the face of this existing diversity in the continuation school, is it rational to assume that instructional material prepared for the use of a class will be fully beneficial to all, or are the conditions being viewed frankly and recognition given to the fact that the class method will probably reach less than fifty percent of the pupils and the remaining members will receive little or nothing? It is not physically or mentally possible for any teacher to give the needed help, encouragement, and assistance to an individual pupil through the class method.

Further, is it reasonable to expect that under classroom conditions, where only a limited number of the pupils profit or are even touched, that interest followed by self-activity will prevail? All educational progress is conditioned by these two factors, interest and self-activity.

Teachers, supervisors, and directors in continuation-school work have no alternative. They must provide a type of organization, a kind of subject matter, and a method of teaching that will immediately result in needed and desirable changes in each boy and girl in attendance upon continuation-school classes.

4. *The Unit Instruction Method in the Continuation School*

The unit instruction method is being advocated and strongly urged for use in continuation-school classes because it provides an educational task for each child according to his or her needs. It provides assignments closely associated with their interests, provides needed and appreciated work for the full time of each day, and permits of progress according to individual ability. This method removes all hampering restrictions, and the child establishes his own stride in his own pathway. It is but a recognition that the boy or girl is the unit of instruction.

The responsibility of the teacher is increased many fold under this method. The teacher must study, advise, encourage, assist, and appraise each boy and girl, instead of administering a general treatment to all. Abuse of this method is readily possible, but it should be recalled always that the method is based on fundamental principles of psychology and teaching.

5. *Implications for Other Forms of Education*

Individual differences exist in every group of students. This condition demands of the educator that he provide that form of instruction for the members of the group that will insure progress according to individual needs and ability. This situation places the responsibility directly upon the teachers of preparing units of instruction for much of the subject matter and of applying methods that will meet the actual classroom situations prevailing in junior and senior high schools, elementary schools, vocational schools, and evening schools. The fact that different types of schools represent a diversity of subject matter should not modify the generally accepted standards of accomplishments that public education is striving to attain or effect the employment of the most efficient and effective methods in the teaching-learning process.

CHAPTER V

WHAT A FEW PART-TIME OR CONTINUATION SCHOOLS ARE DOING

A. INTRODUCTION

Anthony M. Goldberger
Principal of Continuation School, Pittsburgh, Pennsylvania

Probably no field of educational work to-day offers greater opportunity for the development of new content in the curriculum and for new methods of instruction than does the part-time school. Two factors contribute more than the others to make this so. In the first place, the part-time school is so new that it is practically unhampered by traditions; and in the second place, it is almost entirely independent of the restraint imposed upon other schools, which have to conform, partially at least, in their curricula to the entrance requirements of the higher schools for which they prepare. In the light of our knowledge concerning the reasons why pupils leave the full-time school—their dislike of school, the failure of some in school studies, and similar reasons—a radical change in content or method or in both in the continuation school would seem to be indicated as a fundamental necessity before successful work can be even attempted.

It is, therefore, of particular interest and value to note how a few of the part-time schools are experimenting in these particulars. Only a meager sampling can be presented here. A great many others, as valuable and as interesting in some respects, are being conducted in other communities.

B. ROCHESTER, NEW YORK, CONTINUATION SCHOOL

E. A. ROBERTS
Principal

A continuation school was opened in Rochester in September, 1920, requiring only pupils between 14 and 15 years of age to attend. Two hundred and thirty-four were registered. The present enrollment is about 4300 and includes employed children under 17 years of age. When the law is fully in force in 1925, it will affect all children under 18 years of age. About 5500 will then be required to attend.

Few boys and girls who withdraw from the upper grades of the grammar school retain an active interest in the lines of work begun in school. This is serious for whatever mastery may be theirs is at best but a mastery of the tools of education.

They leave school at just the time when the school could best help them to appreciate the great ends for which these tools might be used.

The continuation school (as its name implies) continues the instruction of employed children for not less than four hours each week during the regular school year.

The related academic subjects in the continuation school take up about half of the time of each class and are grouped under four main headings: mathematics, English, civics, and hygiene.

Inasmuch as Rochester contains a large number of industries of various types, it is, of course, necessary to make a survey of juvenile employment in order that one may know the proportion of children working in the various industries.

It has also been of value to make a survey of the students registered in the school in order to show the total number leaving any one school and the grade last attended. This has been of much assistance in grouping as far as possible according to grade.

The following courses are offered at the present time in the Rochester continuation school:

Boys

Machine Shop
Electricity
Sheet Metal
Masonry
Drafting
Cabinet-Making
Patternmaking
Printing
Instrumental Music
Office Practice
Typewriting
Bookkeeping
Retail Selling

Girls

Home-making
Dressmaking
Office Practice
Typewriting
Sewing
Millinery
Bookkeeping
Retail Selling
Instrumental Music

The ultimate success of any continuation school depends largely upon the ability of those directly responsible to deal with each pupil as an individual case. Furthermore, each case may represent problems new and complex. It is not only the duty of teachers to conduct their classes but they also have an additional duty, namely, that of acting as an educational and vocational counsellor and thereby determining the individual needs of all pupils in their classes.

The problems involved in meeting the needs of pupils in the continuation-school classes can not be solved with any reasonable amount of satisfaction unless considerable time is spent in group meetings of the teachers of various departments where proper consideration is given to the methods to be employed in conducting such classes of widely varying interests. In such meetings teachers may contribute materially to the general fund of information. Thus, the pressing need for new and interesting material can be supplied. It is necessary that these meetings be confined to members of separate departments and not be a combination of several groups. Meetings of mixed groups may result in a lack of interest and an inclination not to contribute to discussions.

A rather important factor to be considered is that of placing all such material in the form of individual instruction sheets in a so-called "clearing house" where it is available to all members of the teaching staff, thus eliminating much duplication of time, effort, and content.

C. JOHNSTOWN, PENNSYLVANIA, CONTINUATION SCHOOL

JAMES KILLINS
Director of Vocational Education

Most of these children quit school to get working papers. One of the aims which we keep in mind is to develop the feeling that schooling is not restricted to school houses. We try to emphasize that we continue to learn through a lifetime, that there should be no stop, merely a change. Hence we plan the use of libraries, correspondence courses, evening unit courses, etc. The continuation-school time is short—it will end at sixteen. We want our boys and girls to continue training themselves. The routine of regular school fitted them for the next step—we recognize that the step is *Life.*

My experience, apart from the war-time years, shows that not two percent of the boys are engaged in industrial trades. It could not be expected below sixteen. Many of them have no definite vocational intentions. Our next big aim has been to help the pupils find themselves. Our vocational guidance, however, has this sympathetic angle; that we recognize capacity limits and that many of the less desirable and menial occupations of life can conscientiously be advised for certain pupils. We are prone to place too high a standard of attainment and instead of lifting up, merely befog and interfere with the life program of some weaker member of society.

The next aim is merely opportune pedagogy. Where has there been such a chance to tie up school instruction with actual occurrences, with life as it is experienced? Hence we try to make everything have a direct significance to the child. Arithmetic, civics, and English, no matter under what titles they are given, are always actual or hypothetical conditions dealing with continuation-school boys or girls, their parents or friends, their home or environment.

Most of the good work is done on a project basis, where pupils are not restricted to bells, periods, subjects, but where they spend a day or part of a day solving something which *they want to solve.* Our success is measured by our ability to get these boys and girls to doing things continually because they want to, not because they have to do so.

We have unit courses along such lines as manicuring and hairdressing, manners, office work, messenger service, retail selling, and many other fields. Some of these short courses consist of ten lessons, some more. Some terms we do not give them; other years we add to them. We have not reached any place where we prescribe in advance for the ailments of all continuation-school groups —past, present, and to come. Quite often a group suggests an entirely new approach in order to cover English training, civic, and social improvement. It is the only place in the educational program where you can finish up to any degree the few weeks that end school days for the great percentage who quit.

D. CHICAGO, ILLINOIS, CONTINUATION SCHOOLS

A. G. Bauersfield
Supervisor of Continuation Schools

Chicago offers an interesting example of diversification of curriculum to meet the needs of the particular communities in which the continuation schools are located. In the continuation department of the Washburne School, the 'Cycle Plan' is carried out. This plan gives a boy from fourteen to sixteen years of age an opportunity to test out his inclinations and abilities for vocations by giving him approximately twelve weeks of shop work in a number of different shops.

The South Division Continuation and Automobile School is located near the heart of 'Automobile Row,' on South Wabash Avenue. Courses in various classifications of automotive mechanics are offered for adults and for continuation-school pupils.

Commercial and home economics courses are also given in both the continuation schools and in the evening schools, from the standpoint of vocational training. The Jones Continuation School, for boys and girls employed in commercial work, is located near the loop district, and offers courses in filing, bookkeeping, calculating machine work, stenography, business English, and general office routine.

The Herriet Winchell Continuation School is devoted entirely to the instruction of girls and corresponds to the Washburne Continuation School for boys. Girls employed in various millinery houses, department stores, etc., are given courses correlated with their occupational activities, and in addition, considerable emphasis is placed upon the work in home economics, hygiene, and civics.

There are also seven continuation schools located in the packing house district, at the Federal Bank, and at the Telephone Exchanges. Space for these schools is donated by the companies who employ the pupils on a part-time basis.

E. SCHENECTADY, NEW YORK, CONTINUATION SCHOOL

CHARLES W. CLARK
Director

We look upon the educational product of the city of Schenectady as formed of two classes of people; those who will graduate from the high school and go further into executive or professional positions, and those who will terminate their fundamental education short of a high-school education and enter into some life work without any specific preparation. The city of Schenectady has been fortunate thus far in having as an integral part of its two large industries very effective trade apprentice courses. Into these courses a large number of the boys who leave school before high-school graduation naturally drift, although the General Electric Company bids strongly for high-school graduates. These apprentice courses, however, do not in any full sense provide any occupational preparation for the large number of pupils leaving school each year, and to meet the needs of this group we believe the continuation school, or part-time school, a very necessary, and a vital agency.

As a matter of fact, it is at the present time the only school in the system which offers any vocational guidance work, and so is meeting a very real need. While we rocgnize our responsibility in a measure to continue the education of the minors who come to us, we specifically connect that education with practical occupations, and we count as our major objective the guidance, fitting, and placing of these minors vocationally, and the development in them of desirable traits of American citizenship.

Proceeding logically, we have organized our courses of instruction on the basis of the prevailing occupations in the city. Thus the metal trades and the building trades are most largely represented. We are offering courses at the present time in general woodworking, carpentry, cabinet-making, sign painting, blue-print reading, machine shop work, drafting, salesmanship, clerical work, and typewriting for boys. For girls, we have courses in retail selling, clerical work, typewriting, homemaking, dressmaking, and millinery. Believing that the four-hour period of continuation-school work is a period given to us to utilize most fully, we make it a four-hour period of real opportunity to the pupils in our school. We believe, in the first place, that they have no knowledge of the nature of occupations nor of the occupational opportunities of the community. Hence, we offer two kinds of courses in each of the occupations for which instruction is given. The first is an 18-weeks 'try-out course,' which gives them an opportunity for practice in the fundamentals of the occupations, and the second is a definite occupational preparation course, offering the fundamentals of the occupation, but more detailed than the try-out course permits.

One of our faculty is appointed to interview and record the history and vocational preference of each entering boy. In accordance with his preference, he is placed in a try-out class, and if his preference is found to be based on natural ability, he is transferred to an occupational preparatory class. If not, he is routed into a series of try-out classes in order that he may have a full opportunity to test his aptitudes and to learn something about the various vocations. A similar program is in operation for the girls.

It has been our policy to get in touch with the homes of the pupils, in order that we may know them more intimately. It has also been our policy to study the needs of employers at first hand and the vocational opportunities offered in the plants and business houses of the city. We have established with these employers a reputation for being able to select pupils with the proper aptitude for the needs of any opening and with acceptable personal features of intelligence, dependability, and co-operation. Having established the contact with employers, it is possible for us to find jobs for our pupils not only of a temporary nature, but also as the natural outlet for those in our occupational preparatory classes. We are able to direct many of our pupils directly into the apprentice courses of the city, both in the metal trades and the building trades and trades in which the girls can fit.

I may say that we have not considered the matter of so-called 'trade extension work' because the question has not arisen to any great extent. This is doubtless in the future for us when we shall, after 1925, absorb the seventeen-year-old group. Thus far, we have considered as our primary function (to summarize) the vocational guidance, the fitting, and the placement of our pupils, as well as developing in them desirable traits of citizenship.

F. CLIFTON, NEW JERSEY, CONTINUATION SCHOOL

CHESTER F. OGDEN
Principal

An interesting example of how a comparatively small continuation school can be so organized as to give its pupils the advantage of working with other pupils of equal mentality is shown in the Clifton, New Jersey, continuation school.

Clifton, which is a city of about 28,000, is situated in the metropolitan section, having a number of manufacturing plants in which minors are employed. The board of education had a continuation school established as required by law. The school has had each year an enrollment of about 400 and is organized according to mental groups. The highest group attends on Monday for six hours—the other groups on Tuesday, Wednesday, Thursday, and Friday; each group attends six hours per day.

The school is organized on the pre-vocational basis. Three regular teachers are employed, two women and one man. The pupils are given instruction in academic subjects, with attention to health, hygiene, physical education, citizenship, and social efficiency. The aim in all subjects is to have correlation with the actual activities of life. Courses in domestic science and practical sewing are given the girls. The course in cooking is centered about the fundamental principles governing successful baking, selection, preparation, and tasteful serving of food, avoiding waste, and simple work in dietetics. The choosing of suitable utensils and linens, computing costs, elementary work in budget making, keeping household accounts, checking bills, etc. are given much attention.

Instruction in sewing includes such topics as relate to health, selection and care of clothing, mending, making and remodeling simple garments, patterns, choice of materials, etc. The use of the sewing machine and its attachments is emphasized. Girls are encouraged to bring their individual sewing problems from home. We have an excellent equipment for domestic science. The dining room is fully equipped—also a stock room for keeping supplies, refrigerator, etc.

The boys are given instruction in manual training, for which the equipment is mostly for a woodworking shop in which the elements of carpentry, cabinet making, and pattern making are taught. The arithmetic work of the class is given to correlate with the work of the shop. Freehand and mechanical drawing are taught. The boys in the shop are encouraged to bring in their individual problems—especially such articles as need repairing. The boys have set up wires for radio, and they get much benefit from its use. Discussion along radio lines is encouraged.

I might add that we have very little trouble in the matter of discipline. Our hardest problem is to locate and get pupils to report for registration. After we get them here, we follow up their attendance. If pupils are unable to report one week, they are requested to do so the next week. In 1920 our percent of attendance was 94. Last year it was 99.

The work of the continuation school is very interesting. It is not static. The actual purpose of such a school is to give these boys and girls who have left school a better chance. The content has been discussed. The method must be independent and not along the old pedagogic lines. It must be adapted to the various groups according to their various needs.

G. PITTSBURGH, PENNSYLVANIA, CONTINUATION SCHOOL

Anthony M. Goldberger
Principal

The Pennsylvania law requires an eight-hour weekly attendance at continuation schools of juvenile workers between the ages of 14 and 16 years. In Pittsburgh this period is divided into two equal periods of four hours each. One of these four-hour periods is devoted to vocational or pre-vocational work, with such related subject matter as is necessary to supplement the manipulative skill required in the occupation. The choice of the type of work rests almost entirely upon the student's desire. The comparatively small percentage of pupils who are not in purely juvenile occupations usually choose the vocational work most closely related to their occupation. The remainder make choices in keeping with their interest or their plans for the future.

The remaining four hours of instruction are devoted to general subjects. These are a recognition of the fact that pupils, regardless of the differences in their future occupations, are citizens of the same land, with the duties, responsibilities, and privileges that devolve upon all other citizens. Instruction is given which has as its aims, among others, to bring about better habits of citizenship, proper uses of leisure time, respect for health, and a good attitude toward further education. Instruction is on the daily unit basis, and material is chosen from those problems which directly concern the pupil's present life.

H. DETROIT, MICHIGAN, CONTINUATION SCHOOL

E. Lewis Hayes
Supervisor of Industrial Education

The actual purpose of the junior continuation school is to carry over the previous education of the young people to the practical problems of life which they meet every day. The junior continuation departs from traditional practices and attempts to put these young people into a place in the complex maze of industrial activities, to find the correct position and prepare the boy or girl to fill it—a task which he or she would be impossible of accomplishing without proper guidance. Now, to train a boy to fill a place in industry or commerce involves an almost indeterminate number of variable factors, of which the chief variable is the individual. To cope with the problem of the individual, it is necessary that there be the closest co-operation between the school and the industries in which the boys and girls are working.

To accomplish the purpose of linking the school and industry, co-ordinators go between the teacher and the employer. A co-ordinator studies the exact qualifications of the boy's job, and its future, then transmits the results of his investigation to the teachers who have the boy in classes. It is the obligation of the teacher to adapt the course of study to the needs of the student. The junior continuation school attempts, and is quite successful in the attempt, to give every student the training that he desires or the training which it is determined will be to his greatest advantage. The best education possible under the handicaps of a newly devised system of education demands that the courses offered be practical and efficient, and still permit of a wide range of variability. It is with this end in view, that no innovation is instituted in the junior continuation school until its practicality from educational and industrial standpoints is assured.

The time that the boy or girl spends in the school must be taken from the regular working hours between 8:00 a. m. and 5:00 p. m. Out of the 48 working hours, eight hours a week must be spent in school from the age of 14, when working permits are first granted, up to the age of 17. This means that if the boy drops out of school at 14, he must spend 16.6 percent of his working hours in the school. Four hours are spent in the social sciences and four hours in the trade, or occupation group. Provision is made for 'try-out' courses in case the student is not satisfied with his present field of endeavor.

Following are the curricula:

1. *Vocational*
    - (a) Commercial
        1. Boys
        2. Girls
            Store and office occupations
    - (b) Industrial (Boys)
        1. Machine shop
        2. Sheet metal
        3. Electrical
        4. Automobile mechanics
        5. Printing
        6. General building trades
    - (c) Home Occupations (Girls)
2. General continuation and reservoir classes (Boys and Girls)

The social science courses are designed to increase the general intelligence of the young workers, not only with a view toward better training for future citizenship as distinctly separated from the every day work, but also to give a broader understanding of all industry, in order to offset the prevalent ignorance superinduced by highly specialized processes. Everything revolves about the theory that a well-balanced training for a given trade involves a well-balanced training for the unlimited vicissitudes of citizenship. The courses offered under 'social science' are English, history, mathematics, and civics. Arithmetic and mathematics in this department are most closely related to the trade groups.

The trade groups, as outlined, are most closely representative of the more important trades of the city. It is impossible to give specific training for all of the 260 or more trades, so that a general training in the fundamentals of the groups is given. It is quite possible in a general course to give individual attention to a boy, so that he may get specific training directly relating to his job. And it is also possible to give trade preparatory work for the boy who has not selected a permanent vocation.

The junior employment division of the junior continuation school affords an invaluable opportunity of finding these trade-preparatory boys and girls openings in their chosen fields.

From this résumé of the junior continuation school it may be seen that such education fills a void that cannot be bridged in another way. There will always be a great percentage who will drop out of school as soon as the law allows and while the junior continuation may exert a slight influence toward retaining in school, it will be seen that these cases are the exception. The application of the theory, imparted in the school, to the practice on the job is perhaps the most beneficial phase of the continuation school. As the work is carried on, there are, naturally, many new aspects presented, and with the rapidly developing spirit of co-operation between employer and school, these new problems are becoming more easily solved. It will not be long until the junior continuation school enjoys the same popularity as the academic high school has experienced.

I. ST. LOUIS, MISSOURI, CONTINUATION SCHOOL

L. W. Rader
Assistant Superintendent of Schools

The whole aim and purpose of part-time courses should be that of training in citizenship. In fact, education for complete citizenship must include the successful producing of a commodity needed by society. General intelligence, competent citizenship, and work efficiency form a unit never to be broken. Native ability will vary the methods in instruction.

Part-time courses should increase the general intelligence of the young worker, at least to the point where he will be able to protect his health, to read and to interpret current events, to read and to understand industrial history and geography, and to write a good business and friendly letter. They should also give a practical knowledge of business ethics. We should not lose sight of the fact that citizenship is a working principle.

Work, whether in classroom, in office or in shop, should foster citizenship, not only in sentiment, but also as a working principle. All work done by pupils of part-time schools should be organized in consonance with this conception. Spelling, writing, civics, etc. should be so taught as to be woven into the life processes of the students.

In the administration of our part-time schools, we ask teachers to devote about fifty percent of the time to helping these workers develop industrial intelligence and skill within their chosen trades. Where the opportunities for advancement do not exist, the boys and girls are prepared for some other definite kind of skilled and remunerative work. We have courses labeled vocational civics, practical English, industrial history and geography, hygiene, and business ethics, all of which, with the instruction in giving vocational guidance and intelligence, revolve around citizenship.

J. BROOKLYN, NEW YORK, CONTINUATION SCHOOL

Benjamin Fox
Principal

The Brooklyn Continuation School fills an important gap in the life of the working boy and girl. These boys and girls, ranging in age from 14 to 17 years, are plunged into industry without any special training, at a restless period of their lives, and are open to every changing influence. At no period in their lives are such pupils more in need of guidance and training. It is this need that the continuation school fulfills.

At the present time the continuation school embraces all boys and girls under 17 years of age who have not completed a high-school course. Attendance is required for four hours per week until the pupil reaches his or her 17th birthday.

Many of these pupils leave the elementary school because of their dislike for the traditional reading, writing, and arithmetic, as well as for economic reasons. Therefore, the continuation school tries to overcome this dislike on the part of the pupil, by giving him supplementary training in the trade he has chosen, thus making for better citizenship.

A good idea of the working of the continuation school may be gained if we follow a child's career through his stay at school. When a pupil registers at the school, he is placed in the preparatory class. In this class he is interviewed by a teacher trained in vocational guidance work. The teacher studies the pupil's former school record, his level of intelligence, the occupation of his father and brothers, and above all, the pupil's prospective occupation, and his ambition and inclination. As a result of these observations, she places the pupil in the appropriate class. Thus, a pupil of average intelligence who likes mechanical work and is interested in carpentry would be placed in the wood-working class. A boy who is working on a truck and who intends to be a chaffeur would be placed in the automobile mechanics class.

A girl who works in a dressmaking establishment and who wishes this work would be placed in a sewing and dressmaking class, while those who are going in for office work are placed in a typewriting or office-practice class where they learn office procedure. It is true that, of the pupils enrolling in the school, a great many are undecided, unemployed, or else employed in 'blind alley' jobs. In these cases the preparatory-class teachers give the pupil an idea of the various trades and assist the pupil in a satisfactory choice. It is also true that a great many have chosen occupations and careers for which the school has no corresponding classes at the present time, such as bakers, barbers, show-operators, etc. Such pupils are placed in classes most closely allied to these occupations until the school is ready to open a class in that particular course.

Having been assigned to a definite class, the pupil's session is fixed so that it will cause the least inconvenience to his employer, and owing to the fact that the school is run on double session, very little difficulty is experienced in that direction. A flexible system of transfer from class to class enables the school to change the pupil's hours to suit the convenience of the employer or to change his class if the boy changes his plans for the future.

Of the four hours a week that the pupil attends, two are spent in a vocational class, such as work-shop, automobile mechanics, typewriting, or millinery, and two hours in the academic room where the drawing, English, arithmetic, science, and industrial history connected with the particular trade are taught. All the work is individual; the courses are planned to fit the individual needs of the pupils. Training for citizenship is emphasized. It is always in the minds of the teachers to try to make intelligent, self-supporting citizens out of these youngsters.

The teacher is constantly watching the changes going on in the minds and plans of the pupils. After sufficient observation, the teacher may decide that the pupil is not fitted for the trade he has chosen and advise him to make a change. The teacher also observes the pupil's outside work, for a 'fellow-up' is an integral part of the school work. One hour each day is devoted to visiting the places of employment of pupils, thus affording first-hand knowledge of the pupil's industrial life. Often the teacher may advise a change in position, especially if he finds the pupil exposed to industrial hazards and risks. He studies the opportunities for advancement and conditions of the work. This 'follow-up' system also serves to 'iron out' any difficulties between the employer and the school or the employer and pupil. The wonderful co-operation that the Brooklyn Continuation School now receives from employers is evidence that this work is most effective. A great majority of firms not only permit their employers to attend the school, but even pay them in full for this time.

The many special activities carried on by the school are too numerous to describe at length. A school bank that teaches these young workers the habits of thrift and school assemblies that are addressed by men and women who have been successful in industry serve to supplement the training for citizenship. A medical inspection service, in co-operation with the Department of Health, seeks to discover any physical defects and leads to proper remedial treatment and selection of congenial positions.

The Employment Bureau in connection with the school is a very valuable feature. The constant shifting from job to job is a characteristic of the adolescent youth. The Brooklyn Continuation School Employment Bureau does not merely obtain positions for our pupils who are out of employment, but tries to place them in occupations particularly suited to their ability, aptitudes, and training. In this respect the employment teacher co-operates with the pupils' teachers. During the school year, September 10, 1922, to June 30, 1923, 1198 boys and 667 girls were placed in positions, and we may mention here that unemployment is practically unknown among the boys and girls of the Brooklyn Continuation School.

Periodically, an occupational survey is made of the present employment of the pupils and their plans for the future. "What are you working at now?", "What do you want to be?" are questions continually asked of the pupils. Thus, the teacher knows his pupil's needs and programs individual work for each child. A modified Dalton plan is used, so that the pupil advances as rapidly as his abilities allow.

It is as a result of this occupational survey that activities and departments are determined in the school.

Thus, in programming work for each child, in securing congenial employment, in assisting him to arrive at a vocational decision, the Brooklyn Continuation School is guiding and advising the child at a time in life when he needs such supervision and training most.

K. PLAINFIELD, NEW JERSEY, CONTINUATION SCHOOL

Arthur F. Hopper
Director of Industrial Education

Perhaps one of the most interesting things to report in connection with our continuation school is the fact that employers, parents, and pupils have all been quick to recognize the value and significance of this scheme for part-time education. It has been particularly gratifying to see how employers have co-operated whenever opportunity occurred.

Such topics as health, thrift, community civics, right attitudes toward the work, employers, and each other have been stressed, resulting in a marked improvement in the pupils.

Our practice cottage (real five-room house), which was formerly used for high-school pupils, was given over to the exclusive use of the continuation school. Here domestic science and art work have been accomplished under actual home conditions. Each day the pupils prepare their lunches and frequently prepare and serve meals to members of the faculty and visitors. Here has been taught household management and the installing of ideal and correct attitudes in connection with home-making. The girls have been quick to recognize the value of this practical training, and in a number of cases have expressed a desire to continue in school after reaching the age of sixteen.

The well-equipped high-school shops were made available for continuation classes, and thus the boys were offered such activities as cabinet work, electrical work, cement work, machine shop practice, pattern making, molding, forging, and mechanical drawing.

Other interesting features in connection with the academic work have been the bulletin board and our information table. The bulletin board has been useful in connection with our weekly drives on thrift, health and hygiene, fire prevention and safety first, etc., as well as for current events. The information table is covered with newspapers, current magazines, books on vocational guidance, numerous pamphlets describing various types of industry. This table has proved very popular and has been of untold help in connection with the academic and shop teaching.

Weekly drives were very successful and brought forth excellent results. During 'Better English' week the pupils were taken to the public library and taught methods of looking up books, how to secure a card, how to use books of reference, and as a result every pupil became a member of the public library.

One of the best proofs that the teachers have won the confidence of their pupils is shown by the fact that these young people frequently visit them after they reach the age of sixteen. In a number of cases, the girls have called on the teachers and spent the evenings with them sewing, chatting, etc., and have taken them into their confidence concerning personal matters, which often gave the teacher an opportunity to be of valuable assistance. The continuation school has opened up many avenues for this type of social service work.

Much of the success of the work has been due to the very valuable assistance and many helpful suggestions given by the State Department. With this continued co-operation it will be possible to build up a new type of education that has so long been needed by these young people who leave school to go to work. This education will have a far-reaching influence in their lives, the significance of which cannot be overestimated. Moreover, we feel confident that employers will benefit by having better trained and more efficient workers.

CHAPTER VI

DAY AND EVENING INDUSTRIAL COURSES IN SMALLER CITIES

A. THE GENERAL SITUATION

In reviewing the reports from various school systems throughout the country one cannot but be impressed with the feeling that many of the evening and all-day vocational schoolmen are unwilling to make definite assertions concerning what is to be taught.

Many contend that certain things can be accomplished and are being accomplished, and that certain things can be taught best, only on the job. Many of the leaders believe that there should be one type of training recognized as related subject matter and another type which is strictly of trade content in the manipulative processes. There is a feeling that each should be kept separate and taught by different instructors. It is with respect to the manipulative side of vocational training that great differences of opinion exist as to where it should be taught.

Mr. Lewis Gustafson, Superintendent of the David Ranken, Jr. School of Mechanical Trades, St. Louis, Missouri, feels that much of the work in the school shops must of necessity be of an exercise nature. This is especially true in such courses as plumbing and electricity. These exercises need not be of a useless type, but may be presented as parts to be used later in some form of production or construction of a permanent nature.

Much of the work as done in the Ranken school is taught as production work, but on a jobbing, rather than on a quantity basis. By this means the particular teaching job is 'put over.' The learner attains certain skills and information, and the product is useful. Mr. Gustafson cites some specific cases from industry itself in such commercial establishments as The General Electric Company, at Lynn, Mass., The Augsberg-Nurnberg Werke, of Leipsig, and The Siemann-Schuckert Werke. In all of these corporations the apprentices are trained under the factory roof, but in separate rooms or divisions, with special teachers in charge. The product of their training is of an exercise nature, in part, and often is the construction of miniature working scale models of the product of the plant. In the Augsberg-Nurnberg plant, for example, they were building scale models of steel bridges. In all cases the time element of production was eliminated. The students were grouped for class instruction, rather than for production. This seems in itself to substantiate the methods of the schools in keeping the learner out of the production department and placing the emphasis of his training on learning necessary skills and information before allowing him to compete as a producer. At times, parts are made for the finished product and then turned into the stock bins for assembly.

Both the Pratt Institute and the David Ranken Trade School work, to some extent, on commercial parts which they have made arrangements to obtain from some manufacturing plant. But there is a definite understanding with the manufacturer that these parts are to have second place in the school work and will be worked on only as a teaching job. Such work is very desirable, but when contracts for ''5000 bolt holes'' and similar jobs are undertaken to be delivered within a definite time the learner soon becomes exploited, and production, not learning, becomes the dominate aim.

B. THE DAY VOCATIONAL SCHOOL

O. B. Badger
Director of Industrial Education, Wichita, Kansas

The day vocational school is expected to prepare students more than fourteen years of age for entrance into industry, not as mere journeymen tradesmen in the fullest sense of the term, but with an industrial intelligence plus a reasonable degree of skill. It is impossible for the schools, with the time which the type of boys and girls that enter vocational schools can give to such training, to develop a high degree of skill in them, except in the semi-skilled trades. Either skill or industrial intelligence must suffer during the training process. After the boy is in the trade and without aid, he can much better develop his skill than he can his intelligence.

The instructions in the trades taught should include the study of actual tool operations and the basic underlying principles. Without the theory, the school would not turn out those that could become the leaders in their respective trades, and that is one of the important functions of the day vocational school. For those that have the natural ability for leadership in industry, the school will have served them well, and the others will have lost nothing by having acquired the fundamental principles. The expense of such schools is too great to turn out mere workers only.

Since the purpose of this type of training is to make the future leaders in industry, it becomes the duty of the school, in addition, to make intelligent citizens. Therefore, the practical shop work should be closely related to the study of mathematics, science, and drawing which effect his trade or to any other regular school work a knowledge of which will make him a more resourceful worker. The school should also bring him in touch with the problems that will vitally concern him outside his working hours through the study of civics and the elements of economics. A knowledge of the English language should be his, so that he can interpret all of these things intelligently as they are brought to his attention on the printed page. Time will not permit giving him a classical course, but he can get a working knowledge.

The question is frequently asked: "To what extent should the school shop work duplicate the actual conditions in industry?" It would be highly desirable to make this duplication, but it is almost an impossibility. The cost of keeping an up-to-date equipment is prohibitive in many of the trades taught. And it is not always possible to get work on which the jobs are sufficiently varied to give the student an all-round shop experience such as he will meet from time to time in the actual shop. It, therefore, becomes necessary to introduce some projects which do not have an immediate commercial value. The writer has never seen a school where production work was the only work on which the student received training and was turned out with all of the experiences on the major operations and tool processes with which he will come in contact, unless the trade taught is semi-skilled.

The work assigned the pupils should not be in the form of mere exercises, except where the finished exercises can be utilized in a finished project which could be used, even though it may not be. It is far better that a student in auto-mechanics rebuild a car from two old ones, even though it is not of great commercial value when completed, than to work on some part that will never go into any car. By merely working on an exercise, he does not connect that part with the whole and does not see relationships.

C. EVENING VOCATIONAL COURSES

O. B. Badger
Director of Industrial Education, Wichita, Kansas

The organization of an evening school for those in industry presents a complex problem. The first question is the consideration of what trades or portions of a trade can be taught effectively with the equipment found in the local school system. Only a few schools in the smaller industrial communities have many fully equipped shops, wood shops being perhaps the exception. Therefore, the instruction given must be confined largely to related subjects where little equipment is needed. Then the question arises as to what trades have content which would be aided by a study of related subjects. We know that the bakers, the cleaners, and the electroplaters have need of industrial chemistry; that carpenters, cabinet makers, boiler makers, and sheet metal workers need to know how to read a blue print, and that some of all of these groups need a better knowledge of shop mathematics. But there are other trades which may be aided if they were analyzed as some have been by our Federal Government.

It is perhaps easier to hold the interest of the students better if a shop is equipped and it is thus possible to teach the practical shop work rather than the related information. Most men appreciate their immediate needs best and in the practical shop work they can get something that they know they will need to-morrow. It is not always so with related subject matter: some of it will be of no value for perhaps a month, or a year, or two years.

It is questionable whether both the theory and the practice can be taught effectively at the same time, even though the necessary equipment is at hand. The time is too limited, particularly in such a trade as that of the machinists. Only a few men are willing to spend three nights per week for a period of two school years, and in the smaller cities it would be impossible to get enough men to make up a class. In the larger cities, there are enough in any one trade from which to draw, who will have the determination to go through with it.

It is possible to teach units of a trade which can be accomplished in a few weeks time, such as the use of one or two machines or one of the related subjects. Most men will stay by the evening school for a period of ten or twelve weeks. The next year another unit can be taught, and so on. Then, too, some men want one part of a trade, and some another, and for this reason it is highly desirable to have the work offered by units.

Men who enroll in an evening course are usually concerned in getting something that will help them to the next best jobs as soon as possible. They do not want, in the related subjects, a general course in science or drawing—valuable as it might be, but the science and mathematics and drawing that they want and need, must have specific value. There will be no danger of getting too much theory if a practical man has been selected to do the teaching, but this must be guarded against if an academically trained person has charge of the class.

The most discouraging thing to a night-school teacher is the dropping out of the students. Perhaps the most general cause is the lack of determination. The next most common is that the man finds out that he doesn't have the necessary background, academically, to keep pace with the others in the class. This is particularly true in courses in mathematics. Then, again, classes are too frequently held where it is not convenient for some of the men and often they feel 'out of place.' Many men hesitate to go to a school building. Some of the most successful classes are maintained in the shop in which the men work during the day. Often they prefer having the class before going home in the evening or with only a short time out for lunch. Where this is done, the men have the rest of the evening for other things.

Another cause for men dropping out is that they permit outside engagements to interfere with school night and cause them to get behind the class and consequently to lose interest.

If a teacher has been selected in whom the men have little faith, soon the class will begin to lose members. It is better to have one in whom the men have confidence, even though he be not so good a teacher. An instructor must be sympathetic with the men with whom he is working. He must know the men's problems as they come in contact with them on the job.

The evening trade extension class is not a one-sided, or even a two-sided matter. The man, the employer, and the public are concerned. A written agreement between these parties is not necessary, but there should be a verbal agreement. The employer will give greater support to the work if he is consulted. The purpose of this instruction is three-fold; to make a better producer of the man for his own sake, to increase the efficiency of the plant in which he works, and to increase the efficiency of industry in general.

D. VOCATIONAL EDUCATION IN EAST CHICAGO, INDIANA

O. H. Day
Assistant Professor of Vocational Education, Indiana University

East Chicago, Indiana, a city of approximately 36,000 people, lies along Lake Michigan, twenty miles southeast of Chicago. It is primarily a manufacturing city; most of the industries are owned and operated by outside interests. Steel and its products are the principal industries, although the Sinclair Refining Company and Grasseli Chemical Company have very large plants there.

The people of East Chicago present an interesting study, as approximately eighty-five percent are of foreign birth or parentage and twenty-two nationalities are represented. This one statement immediately indicates some rather unusual educational problems. Most of the children of East Chicago have a different conception of education and its value than the children of the majority of American cities. A large number of the children and parents feel that when the fifth or sixth grade has been completed, the time has come for the child to sever his connection with the schools and enter industry. Naturally, with such a condition prevailing, the greater number of the young workers are in the low-skilled occupations, and the process of upgrading to the higher skilled jobs is very slow. There are a great many highly skilled tradesmen in the factories of the city, but most of them do not live there. This all has a direct bearing upon the possibilities of vocational education, for two reasons: first, the only available jobs for young workers are of rather low order; and second, it is therefore difficult to 'sell' them the idea of taking definite trade training while in school.

Another phase of this problem is the attitude of the parents. They have all had to work very hard for an existence, most of them at common labor or at jobs requiring very little skill; it is very difficult for them to see why their children should remain in school getting an education, when they might be assisting in the support of their family, which is usually quite large. Hence it seemed (from a study of these conditions) that the first thing to do with the parents, most of whom cannot speak nor read the

English language, was to get as many as possible into evening school, not for trade work, but for the study of our language. The manufacturers were easily convinced that this was the logical course to pursue, and backed the English language classes in the evening schools strongly. This resulted in a marked increase in enrollment in the evening school; but, most important, it raised decidedly the percentage of attendance. In fact, during the first term this scheme was pursued, the average attendance was a little over eighty percent of the enrollment.

At the same time that we were 'selling' the English language courses to the manufacturers, we interested them in the day unit trade school for boys to see if they would accept our product when it had left our schools. We did this because we believed it wrong to organize vocational courses of any kind unless the product thereof (namely, the boys or girls who completed all or any considerable part of the courses) could find employment in the local industries at the trade for which they were trained.

Five lines of trade work were offered to the students at the beginning of the second semester of 1922; namely, machine drafting, job shop printing, wood pattern making, machine shop practice, and automobile mechanics. The specific purpose of each of these courses was trade training. No boy was allowed to enter the work of any course unless he had definitely chosen his trade and could support his choice with some fairly good reasons; and once in the course, he was made constantly to feel that he was preparing for trade work. He were not laboring under the misconceived idea that we would turn out a finished tradesman; but we hoped to build a substantial ground work for his trade skill and trade knowledge.

The courses are of two years duration, but are developed into semester units, so that, if a boy leaves at the conclusion of any one semester, he will have learned something of definite value in his chosen trade. In so far as possible, we duplicated shop conditions as he would find them on going to work; and a strong effort was made to prevent the formation of wrong habits of work which had so frequently given our vocational courses a 'black eye' with the manufacturers. The instructors were urged to take every opportunity possible to familiarize themselves with trade conditions as they existed in East Chicago, and as frequently as possible to bring practical problems to the schools from various industries.

Along with the trade training, we stressed the idea of training for intelligent citizenship. In other words, we began our courses in civics in our school shops and carried them to the classroom, rather than vice versa.

We made use of a project and factory method of instruction so far as possible.

In conclusion, I wish to say that we have never found any difficulty in obtaining the co-operation of business men and manufacturers, or in selling our wares to them, providing we went to them with a workable scheme instead of a 'half-baked' idea. In our evening schools the manufacturers supported us as they did because they saw what value it would be to them for their workers to be able to read and understand directions given in the English language. This same spirit was passed on to the teachers, who, in the writer's judgment, are mainly responsible for good or poor attendance in any evening school.

Our plans for the future include an enlargement of English language work in the evening schools, and from this a gradual introduction of vocational courses in both day and evening schools.

E. THE SAUNDERS TRADE SCHOOL, YONKERS, NEW YORK

JOSEPH J. EATON
Saunders Trade School

The Saunders Trades School has graduated 565 pupils during the past ten years. A survey of the activities of those graduates reveals the fact that approximately only one-third are engaged in the trades for which they prepared, one-third are engaged in trades related in some way to the trades studied in school, and one-third are engaged in work not related in any way to their trade training in school; this division varies very much from shop to shop, but taking the school as a whole, it is fairly accurate, although rather surprising.

A further analysis shows that the third which apparently profited very little by their work in school is composed chiefly of the 14- to 16-year-old boys who entered the school in the 7th grade. This third also includes those who have died or who have moved from the city without leaving an obtainable record.

In no case have pupils been prepared in the school to enter any trades as journeymen workers, but on the other hand, boys have been prepared to enter trades as advanced helpers. Only an incomplete survey has been made of those pupils who remained in school but part of the two-year course. However, we find a fairly large number who are working in the trades for which they received partial entrance preparation, and in all cases investigated, the percentage runs approximately the same as that for graduates. Needless to say, this last group of non-graduates is much larger in numbers than those who completed the full course.

One of the aims of the school is to emphasize the duties as well as the privileges of citizenship, and thus far we have no record of any graduate who has not conducted himself in a manner which can compare favorably with the graduates of any other public school. Our records in this respect for the non-graduates are not available, but it is my conviction that a great many boys have been materially assisted to secure a proper view of their social relations, notwithstanding the fact that when some of them entered this school, they appeared to be facing in the wrong direction. In all such cases it is my belief that what may be called the ''fatherly attitude'' of the shop teachers has been a big factor.

Our endeavor is to place the boys in suitable situations for advancement in manipulative skill and so to guide them that they will acquire the theory underlying these operations. Thus far our teachers of shop work have been persons of more than average ability as workers, but like other teachers in similar positions, their ability to instruct in related subjects has been rather limited; for this reason, related work in mathematics, science, drawing, and English has been conducted by special teachers. Insofar as my experience is concerned, it is my belief that it would be wiser for the shop teacher to care for all related work, as well as for shop work itself. I believe the boy would make greater progress, because the situations arising would be real, and we would not encounter the difficulties which we now experience with perhaps a third of our boys who frankly state that they are not interested particularly in the so-called ''book work.'' I realize that a great deal of some of the formal instruction now given in related subjects would be omitted, and that many shop teachers would find difficulty in instructing in related science and in English.

In a school shop much of the difficulty arises in attempting to duplicate actual conditions in the commercial shops. In the first place, we cannot easily obtain tools and machinery which inventive genius is constantly supplying the productive shop. In the second place, we find difficulty in disposing of our product. Where the product is absorbed within the school system, these latter conditions perhaps do not exist. Here, for example, in our machine shop we have manufactured iron and steel vises for the various manual training shops in the city. During this period pupils have developed new types of vises superior to the first, and it now appears that we will have as large a market as we had when we first started to manufacture the vises. We have built groups of lathes for different training centers, starting first with an ordinary belt-driven speed lathe and finally completing a set of motor-driven lathes. At the present time we have been experimenting with a 14 -inch, 6-ft.-bed, machine lathe, and will probably undertake the manufacture of these lathes for our own use. In this way we obtain good type conditions, but are very far from actual shop practice.

On the other hand, we find that our graduates are usually placed in some specialized form of shop work, and that their training seems adequate to help them secure and keep such positions. As a general rule, the older graduates have not remained as workers of automatic machines, but have advanced as rapidly as we might have predicted and desired.

At some stages in the shop work it has appeared to us highly desirable to present the work in the form of exercises, but as a rule, we bring in various jobs, such as have been outlined for our machine shop. Occasionally some project, like that of building a special machine for one of the other shops, presents itself. If the entire instruction were in charge of a single teacher for each group of boys, I would strongly favor placing a good deal of the work on the project basis.

In the evening school we have always had large groups of people in every shop, and owing to the fact that we operate two separate sessions two nights each, we are able to divide these groups into those who are preparing to enter a trade and those who are endeavoring to increase their trade knowledge and skill in the trade at which they are working in the day time. In the case of the latter, the problem is very simple, because the man or boy realizes what he lacks in order to fit himself for a better paying position. Such instruction is given on the basis of short units. In the case of the first group, the matter of adjustment is more difficult.

While we are quite certain that a plumber's apprentice knows what he needs to be advanced to the status of a journeyman, we find it difficult to determine the needs of the young man who thinks that he would like to be a plumber or the needs of the man who is working at some trade or occupation which is not satisfactory to him, but who thinks that some other trade would be more remunerative and satisfactory. It seems to me that, in the case of the group just mentioned, we must determine their continuance in school on the basis of accomplishment until we perhaps have been able to set up some tests to be tried out before admission. Practically all of the vocational instruction in the evening classes is on the basis of manipulations. We have tried to arrange courses whereby theory will supplement the practical work, but these classes are poorly attended, and thus far we have not succeeded in accomplishing satisfactory results.

There is one exception, however, in the work of architectural drawing, where we have had successful classes in estimating and plan reading. We encourage pupils to bring to the instructor, for advice and counsel, problems which they meet in their daily work. As a matter of fact, we find the success of this plan depends entirely upon the instructor, and not upon the type of work. After all, personality is a great factor in trade instruction, as well as in any other situation in life.

I am very much in favor of the short-unit course for the man who is already engaged in industry and believe that it will work with those who are planning to enter, when it is more fully developed. The main objection that we find now is that these units have not been properly recognized and organized, so far as we are concerned. The fact that the classes are filled at the opening of school, and that the instruction is practically continuous with the same groups throughout the school year, has not permitted us to enlarge upon the short-unit idea to the extent that we would like to, and are planning to do. The matter of organizing classes on the short-unit basis, insofar as we have attempted it, with the workers who are upgrading themselves, has not been a difficult matter. How it would be if the entire school were organized on that basis, is something I cannot answer at this time.

Last year we enrolled about one thousand pupils in our evening school and maintained an average enrollment of about eight hundred. The two hundred persons who dropped out of the different shop courses did so early in the year. We have always found that during the early sessions from 5 to 10 percent apparently are merely curiosity seekers who have no earnest purpose in view. The next largest number is composed of those who have been compelled to remain out of school for two or three consecutive nights on account of sickness or for some other reason, and who state that they do not wish to come back because the class will be so far ahead of them. This is based on the ideas of the traditional school and is a difficult factor to overcome. Irregularity in attendance is in most cases merely a duplication of irregularity in their lives outside the school or is at times the fault of the instructor.

I am very much in favor of definite apprenticeship agreements which provide for evening school instruction along definite lines. One of the trades in this school is governed by such an arrangement. The results in every way are satisfactory both for the school and the pupil.

The chief difficulty with the evening vocational schools, to my mind, lies in the fact that, like the day schools, the opportunities for trade instruction are not wide enough to cover all of the trades or the branches of them, and there is not enough flexibility in equipment and housing facilities to meet emergencies. There also seems to be no definite solution of the question as to the rights of a citizen and tax-payer to undertake to learn a new trade and to have a class formed of such people in a manner that will meet the approval of the state authorities.

Furthermore, it seems to me that the evening trade school ought to be established on as firm a basis as the day trade school with regard to the dates of opening and closing, the permanency of the staff of teachers, and recognition of work performed through the granting of a diploma at the end of a stated amount and degree of accomplishment. It also seems to me that there ought to be some concerted action undertaken regarding the advertising of the school's activities, in order that those who ought to know about the school can be properly reached, for I am firmly convinced that there are many people who, either through a lack of understanding of the English language or because of the isolated situation in which they live and work, are unable to realize the great opportunity for free instruction which lies within their reach.

F. VOCATIONAL WORK IN THE PUBLIC SCHOOLS OF CEDAR RAPIDS, IOWA

Homer C. Couch
Principal, Grant Vocational High School

Students attending the day trade courses are required to be in school six clock hours per day. One-half of this time is spent on shop work, one-third in related science, mathematics and drawing, and one-sixth of the time in history, English, civics, or physical education. We do not pretend to turn out journeymen. Immaturity of the students from fourteen to seventeen years of age and the limitations of equipment make it impossible to teach the 'trade,' in the full sense of the term. Boys and girls, however, who go through these courses are better fitted for entrance into the occupation which they have studied.

Co-operation in classes and between teachers of the school, together with training in citizenship, tends to fit boys and girls for citizenship as well as workmanship. Practical work and theory go hand in hand, and instruction is not sacrificed for the sake of production. A close relationship exists between the shop work and the related subjects. Teachers of related subjects have periods off when they are given time to go into the shops and study conditions there. Problems in mathematics and science are made up to fit the needs. By such co-operation between related subject teachers, and shop teachers, the classroom instruction can be made of very much more practical value to the students.

The shop work is very similar in nature to the conditions which students later meet in industry, except that work is not done for the sake of production. Boys are not rushed through a project. Conducting the work on a purely commercial basis is not desirable in a school, because it does not give every boy a chance to get the all-round training that is needed. Of the three forms of work to be assigned to pupils, 'projects' are the most desirable, because they simplify instruction and provide an incentive for work, giving boys something in which to be interested. 'Jobs' give all-round training, but are liable to lead to duplication of work and loss of interest on the part of students. 'Exercises' are the least desirable, because there is little incentive in making them, aside from doing the work, and often the finished product is of no value whatever to the student who makes it.

In the evening industrial work the specific and immediate needs of workers are met by employing teachers who are familiar with the occupations from which these workers come. The work is largely individual, consequently the classes are kept small. The limited time available for instruction in evening classes makes it impossible to teach a trade, but many students who are young and ambitious have received a great deal of benefit in evening school classes. The instruction should be, as far as possible, supplementary to the daily occupation. If a student meets problems in his occupation, the evening school should certainly help him to solve them. The instruction should also help the worker to go higher in his occupation.

Short unit classes are excellent if the majority of the class is in favor of this type of work. If the size of the class can be kept down to a point where the instructor can meet individual needs, the short unit courses are not necessary in a city of this size; in fact, I believe that the attendance in these classes would be considerably lessened if this system was adopted. In larger cities, where there is a sufficient number of trades to make several groups, it would certainly be advisable to offer the work in short unit courses.

My observation has been that the most important reason for dropping out of evening school work has been the fact that many find the additional work too heavy for them; the second reason is the lack of interest. Many students enroll in evening school classes who never enter the classes. Many others come only one or two nights and drop out when they find there is real work connected with them.

The employers, as well as the employees, should have a friendly feeling toward the evening school.

I do not think that definite plans can be worked out for promotion. The man who benefits by evening school work will show it by his work on the job and must look to this improvement to win his promotion.

The immature evening school student should be advised by the school authorities as well as his employer as to what is best for him to take. The employer should feel free to advise school authorities as to what is best for his employees. Only good can come of such relationships. The employer who has the interests of his employees and his business at heart should feel that he is a part of the school.

G. CO-OPERATIVE INDUSTRIAL TRAINING AT YORK, PENNSYLVANIA

F. A. R. Hoffeditz
Director of Industrial Training

For a number of years, the high-school enrollment in York, Pennsylvania, has been composed of more boys than girls. This is due, in part, to the popularity of the Co-operative Industrial Course in our four-year high school.

During the 1910-11 school term, the Manufacturers' Association and the School Board got together on the part-time, co-operative plan for our high-school boys. The motives in offering this opportunity were: to keep more boys in school, to give the poor boy a chance to earn while going to school, to train boys in a remunerative trade, and to supply workmen in the trades having more than average schooling.

In September, 1911, the course was opened to boys who had completed the ninth year. In 1914 a class of 26 was graduated and up to the present time 270 have finished the course. We are constantly checking up on what our graduates are doing. We find that 60 percent of them are in the community, either working on the job they were trained for or on something that this training has led to. The first class were all machinists' apprentices, while the 1922 class had six distinct trades represented.

The school law does not permit a boy to work until he is fourteen years of age and has passed the sixth grade. Should a boy drop out of school after fourteen, he is required to attend continuation school one day each week until he becomes sixteen. This restriction does not affect our first-year boys, because they are in school full time undergoing preparation in the trade which they have elected to follow.

After their first year in school, these boys are eligible to be indentured to some local manufacturer to serve an apprenticeship in his chosen line. This apprenticeship is for a period of 5,400 hours, in addition to all school time. The boys in school and shop alternate in two-week periods, and all of them work full time during the summer. At this writing, the enrollment is 339, with 195 boys working in 42 different plants.

Since these boys will sometime be citizens in this, or some other community, their curriculum has been fashioned to increase their general knowledge in so far as time will permit. Just because a boy is being trained to work in an industry is no reason for neglecting to augment his store of general knowledge. The school could not well exist without including trade training in the day's work. The school shop is used to supplement and supply the theory back of the operations performed in the commercial plant, because this instruction cannot be entirely delegated to the employer. To meet these conditions, we devote one-third of the school time to trade work and two-thirds to those subjects along the line of general education which best supplement the industrial work. Where possible and feasible, the latter leans toward the industrial point of view.

The type of training put on by the school should be governed, as is ours, by the inclination of the pupils, and the opportunity afforded by the community for them to continue in their trade after leaving school. The trades we are training for are those that the school shops are equipped to supplement. The metal trades group includes machinists, auto-mechanics, and sheet metal workers. The wood working group includes pattern-makers, cabinet-makers, and body builders. The electrical group includes house wiring, motor winding, and plant maintenance work. At present, there are also four draftsmen and two glaziers.

To judge whether this program can be considered a success, one should get in touch with some of our employers, or judge by the degree of advancement some of the 60 percent above referred to have made. The Manufacturers' Association last year had an application for membership from a new firm, the partners in which were graduates of several years ago, and who are now employing six schoolboy apprentices. Last year the boys in school earned a total of $26,065.22. The total earnings since being established amount to $209,286.37. Quite a number of boys, through their earnings, have been enabled to attend higher institutions of learning. But one of the outstanding features is that when these boys graduate from the high school, they do not have to wonder what comes next.

H. CO-OPERATIVE INDUSTRIAL TRAINING AT JOHNSTOWN, PENNSYLVANIA

JAMES KILLINS
Director of Vocational Education

We have in this system a Co-operative-Industrial program for the junior and senior classes in the high school, to follow the tenth-year unit trade courses where the pupil is to spend two weeks in industry and two weeks in school.

About 1914 a co-operative course was established for the sophomore, junior, and senior years, without any plan to give guidance or trade instruction, except as found in old-line manual training. Co-operation was easily established, and the first three years were termed successful. The war prolonged the situation that inevitably arose. Labor was scarce, and without any closely organized trade training, the boys were given plenty to do. Labor laws dealing with age limits and the slump which followed the war made it necessary to revise any program which did not justify the claim that the school already had something to offer the employer. The old co-operative industrial program was concluded last year with the graduation of the few stragglers who had to be taken care of.

In the meantime the more comprehensive plan was inaugurated. Beginning with trade experiencing and 'try-out' courses in the first year of the junior high school, boys with vocational or technical intentions and capacities were permitted to pursue shop courses one double period each day. A vocational counsellor safeguarded the situation, and no undue emphasis was given to the industrial work. Our aims are best expressed in the terms we use: eighth year—"proving year;" ninth year—"fixed choice."

Following the junior high, we have Smith-Hughes unit trade courses for the boys who are to enter trades. Beginning next year, we intend to put our first co-operative industrial group into industry on the two-week-about basis. We know that the time is ripe for us to get started on a real footing. Our employers understand our plans and are with us, and we believe that the boys will profit to the maximum.

Our evening school, twelve hundred strong, has for five years dropped off in a well-defined ratio. This year I am making a careful study and report on why evening-school pupils quit. Not that our percentage is lower than our neighbors and comparable cities, but that the problem needs study. At present, my teachers are reporting the pupil's reason and their reason. The answers are running: "Didn't find what they were looking for;" "Work too hard;" "Live too far away;" "Work too late;" "Too tired at night;" etc. On the other hand, my impression is that a vast majority of evening-school first-week enthusiasts are chasing the "will o' the wisp" of *might have been.* So many think that the jobs of the world came through chance and a little schooling. Moreover, schooling has never suggested much application. Their elementary-school experience is a misty memory. Now, when they try shorthand, for instance, or mechanical drawing, they face the fact that it demands application, hard work and—well, they go back into their walks in life more contented with what they are and perhaps that is real justification for the evening school as a social and economic stabilizer.

Perhaps we have given too little time to the long-term course in night school. Our vocational courses are all short unit from demand, because of attendance, facilities, and personal inclination. For instance, our mining classes are organized definitely to prepare for fireboss and mine-foreman examinations, and are divided into units, advertised as such, and upgraded to meet the varying groups. Most of our machine shop, electrical, blue-print reading, show-card writing, and mechanical drawing classes are always elementary units. We have found no large demand for advanced courses or finishing courses. Our every aim is to help the student meet the actual problems in his daily work.

Most evening offerings are obvious. Long before the opening, the telephone inquiries show what is to be popular. Moreover, trade organizations and other associations make formal requests for certain classes. For instance the Master Plumbers ask for a class in plumbing sanitation. Our experience has been that any course which has not a pre-expressed call is most likely to fail to materialize, no matter how thoroughly advertised.

We have not been as successful in giving trade practice as theory in electrical work, mining, or woodworking trades. Printing, machine shop, and drawing rooms are practice. We have no instance at present where we have both theory and practice going on in the same trade. I have not drawn any conclusion that is defendable.

So far as agreements and relationships are concerned, I presume that I have been in a peculiarly hopeful community. There has never been any time when the working relationships could have been improved by written agreements, and since there seems to be a feeling that all is well, we have avoided any such maneuvering. We co-operate in getting all raw materials for machine shop work without any red tape or interference. Johnstown would be no better off with any agreements, and perhaps get into severe arguments that at present are settled among the few individuals. In further explanation I might say that our two big industries have headquarter offices miles away, which introduces another element of danger where agreements are in force. If I were somewhere else, perhaps I would favor them.

I. THE DAY VOCATIONAL COURSES AT TOLEDO, OHIO

J. M. Sterling
Vocational Director, Woodward Technical High School

In Toledo we have but a limited number of day vocational classes, but are slowly adding new ones as the demand develops and room in our schools becomes available. The classes in operation at present are in session for six hours, one half of which is devoted to the trade subject and one half to the related academic subject. The course is two years in length, and in that time we hope to teach the boy as much of the trade as it is possible to 'put across' to the individual. We know that it is impossible to teach a 'trade,' in the fullest sense of the term, but feel that the boy can be given a big lift toward the goal he has set for himself. I believe we do more than merely prepare for entrance into the trade, but at the same time realize that the boy at the end of the course will not be a tradesman.

Methods and machines used are of the most modern type found in production shops to-day. We feel that the machines upon which the boys work in the vocational classes should be of the same type he will meet in the factory, and with this end in view, we have equipped our shops with modern machines of various makes, in order that the pupil will work on the same type of machines found in the industry. This type of equipment, with a man from the trade as instructor, gives us what we think is a very good basis for instructional purposes.

It has been our experience that the work assigned in the class must, out of necessity, be more or less of the nature of an 'exercise' in the beginning, to be followed as soon as practical by actual 'jobs.' By ''actual job'' I mean the making of some thing that is to be used, and is therefore to be turned out good enough to pass as a commercial article. In some classes, such as machine shop, some articles are made in their entirety by the boy, but this is not general practice. The general practice being to give the pupil an exercise in taper turning, for instance, and then follow it immediately with a number of pieces in the process of construction which involve taper turning. In this way the instruction is given with an exercise, and the pupil is given enough work on a production basis to give him a fair degree of skill.

Class instruction is given whenever feasible, but as a rule, the instruction is individual. In order to assist the instructor in this individual instruction, we are gradually working out a series of lesson sheets. These instruction sheets are so written that they apply to one particular type of operation, and in this way, may be applied to any job involving this type of operation.

So far, I have mentioned only the work in the shops, but going along with this is the work in the related subjects of mathematics, English, civics, science, etc. In these related subjects the work is tied up with the trade that the boy is learning. These subjects have a two-fold aim—to make the boy a better tradesman and a good citizen. In most of the trades, we have been able to develop a fairly good course in these related subjects, but there is a tremendous amount of work required in the preparation of the necessary lesson sheets.

We are thoroughly convinced that the best results are obtained by means of the lesson sheet and personal instruction.

We do not lose sight of the fact that the boy must be educated for his leisure time as well as for the work he is to do. This is amply taken care of in the related subjects. Each lesson sheet or group of sheets has a definite objective in view. This may be either vocational or civic. In either case, the lessons try to drive home certain facts that we feel the pupil should know. We have not by any means, worked out what to us is an entirely satisfactory program of studies, but are learning, by each day's experience, where we may better the work that we have started.

J. VOCATIONAL EDUCATION AT BERKELEY, CALIFORNIA

W. W. PATTY
Director of Vocational Education

The department of vocational education was established in the Berkeley schools at the beginning of the school year of 1920 under the direction of the writer. In the senior high school we have established applied classes in electric work, automobile repair, printing, machine shop practice. We are also making a beginning in pattern making.

It is rather early to speak of results, but we may submit our objectives: first, to recruit boys from the junior high schools, elementary schools, or outside of schools, who have a real interest in training in the trades for which we give instruction; second, to provide instructors of proved ability in their respective crafts; third, to conduct the work on a commercial basis in so far as practicable. In general, we treat our pupils as apprentices rather than as students. Instruction in supplemental subjects, such as mathematics, English, etc., is provided by special teachers.

In the four junior high schools the industrial work includes instruction in cabinet making, electric shop practice, wicker work, furniture making, printing, welding, and mechanical drawing.

The Machine Shop

The machine shop work in the senior high school is in charge of an experienced machinist, who is operating the shop on a commercial plan. No exercise work is given. The work at present includes making repairs and parts for machines in this and other departments, such as gears, lathe centers, lathe dogs, tool posts, clamps, reamers, etc. Patterns are now being constructed for several small machines and tools that can be used in the various manual training shops of the city, and later manufactured for the trade. Tools that have already been constructed for this purpose include vises, power hack saws, small circular saw tables, drill presses, and grinding wheel stands of several sizes.

The instruction is necessarily individual, with the exception of brief lectures and demonstrations on such subjects as heat treatment of steel, use of the micrometer, calculations used in gear cutting, setting up of machines on the various type operations, care of tools and machines, accident prevention, etc. For each piece of work done, a simple job card is made out by the student, showing to whom the work is charged, cost of materials, and time. The pupil's grade is entered upon the card and filed by the instructor.

The Automobile Shop

The work in the automobile shop is entirely upon a commercial basis. While the department owns several old automobiles, the work in the shop is almost entirely upon machines which are brought in by citizens of the city for repairs. For all repairs made, the cost of materials and a slight additional amount for labor is charged. The principal objective of the course is to teach the boy the care, repair, and construction of the automobile, so that he will be able to 'shoot trouble' and repair a machine when it becomes disabled.

The students are instructed in the principle of gasoline motors, testing motors, up-to-date standards of construction, and the use of garage machinery, such as the lathe, drill press, and hand tools. They are also given a course in carburetors, ignition systems, and oiling systems.

The Print Shop

The work done in the print shop is especially practical. All exercises are provided from practical jobs. During the first three months of operation this year, more than $1500 worth of work has been turned out by this department. This work includes the weekly publication of the high-school paper, the printing of tickets for athletic contests, plays, programs for plays, concerts, etc. The course includes the art of printing, press work, English as applied to printing, design, history of printing, proof reading, cost finding, paper stocks and weights and measures.

The Electric Shop

The instruction in electric shop practice includes practical work in all common lines of applied electricity, such as the making of splices, joints, armature winding, charging batteries, etc.

Under the provisions of the part-time education act which went into effect in California July 1, 1920, special classes are maintained for boys who are engaged in mechanical pursuits which supplement their experiences on the job. These courses are of two types. For apprentice boys, supplemental work in mathematics and mechanical drawing is provided. For boys who desire to enter upon some other trade, applied work is given with a view to helping them choose a life occupation wisely.

Considerable attention is given to the design drawing and cost computations of all jobs done in the industrial department of the Berkeley schools. It is felt that this phase of the work is of the utmost importance and is one reason for having such instruction given in the school.

K. ALL-DAY VOCATIONAL CLASSES AT MUSKEGON, MICHIGAN

J. D. Bicknell
Director, Hackley Manual Training School

In September, 1919, all-day vocational classes were started in the automobile, machine, and print shops of the Hackley Manual Training School of Muskegon, Michigan. It was felt that some attempt should be made to train for some definite trade those boys who could not, or would not, complete the regular four-year high-school course. These three shops were chosen for the experiment because they seemed to offer the best opportunities for growth and advancement in the community. The courses as outlined were each two years in length and were planned to conform to the requirements of the Smith-Hughes law.

It has never been our expectation to teach a 'trade,' in the fullest sense of the term. We do feel, however, that we have been able to give to those boys who have successfully completed the prescribed courses, a training which has admitted them to industry on an advanced apprenticeship basis or as workers who are able to earn a good living wage and who have an intelligent understanding of the requirements of their particular trade. Through the co-operation and friendly attitude of the employers of labor, we have found a steady demand for our graduates. In fact, there have been times when the demand far exceeded the supply of available workers.

The aim from the first has been, not only to train for superior workmanship, but also to give instruction that would make better and more intelligent citizenship. It is hard to conceive how a young worker without a proper appreciation of the duties of citizenship can measure up to his full worth to his employer and to the community.

In planning the courses in each department the attempt has been made to teach the processes involved, and as far as possible, the theory underlying these processes. There also has been a close correlation between the work of the shop and the related studies. The teachers of these departments have worked together to secure this end, and the results, on the whole, have been encouraging.

School shop work can never duplicate actual commercial shop conditions, but the attempt is made to approximate actual working conditions as far as it is possible to do so.

In the automobile shop a great many cars are brought in each year, and the work is handled as nearly as possible as it would be in a commercial shop. All kinds of jobs are undertaken, from the cleaning of a spark plug to the complete tearing down and rebuilding of a car.

The machine shop boys have built considerable equipment for the new junior high and continuation schools, including lathes, drill presses, grinders, steel stools, etc. Some twelve or fifteen rowboat motors have also been built. The same degree of accuracy is required as would be required in a commercial shop, and the shop conditions are made to approximate as nearly as possible what the boys would encounter later in productive industry.

The print shop turns out practically all the blanks, forms, and outlines required by the board of education for carrying on the work of the school system. A school paper is printed monthly as well as the senior class annual in the spring. The results in this department have been especially gratifying, and it has been impossible at times to supply graduates enough to fill the needs of the printing establishments of the community.

In all the departments the work is given almost entirely in the form of jobs or projects, and the boy is held accountable for results much as he would be in a commercial shop. It is difficult enough under these conditions to make the school shop approximate the actual conditions to be met later, to say nothing of what would be the result if the attempt were made to assign the work in the form of exercises.

L. ALL-DAY VOCATIONAL CLASSES IN ELECTRICITY AT UTICA, NEW YORK

CLARENCE L. CROFOOT
Utica, New York

The two-year high-school vocational course in electricity at Utica, New York, is organized under the Smith-Hughes plan; that is, for boys who are at least 14 years old or past the eighth grade. In this particular case, all the boys are grammar-school graduates and ready for the high school, but feel that they cannot stay in school long enough to complete a regular high-school or technical course, yet they want to take up electricity as their life work. These boys attend the electrical class three hours a day, or fifteen hours a week; the rest of their time is spent in mathematics, drawing, etc. Their work covers a practical course in bell wiring, house wiring, wiring for light and power in factory and office buildings, principles and construction of D.C. generators and motors, and the fundamental principles of A.C. circuits and machines. They are also given 'trouble shooting' and general repair of electrical machines. Two hours a week are used for theory and lecture work. The general aim of this course is to give the boys clear ideas of the fundamental principles of electricity and magnetism which are applied in the construction and uses of electrical machinery and appliances, as well as the best methods of wiring buildings for the efficient distribution of light and power, in order to encourage boys to develop in knowledge and efficiency after they are out of school. It may be still more briefly stated that it is to get the boy in the habit of "doing his own thinking."

A large number of the boys who enter such a department do so with no particular reason for their choice. They say: "I thought I would like it," "A friend told me it was a good line," "It looked interesting," or "I wanted to learn about motors." Only a very few have any real definite reason for coming. We find it a good plan to spend the first hour or two in drawing the class of beginners out on a careful analysis of the whole trade, showing them what the various lines are and where these will lead. This also includes what their probable line of promotion will be and what is required of the worker in the way of physical strength, education, environment, etc. After such an analysis, many will decide that they are in the wrong work, which they frequently are; on the other hand, those who stick will be more keenly interested and will be working with a definite view of what they want. An opportunity chart, which shows the various lines or branches of the trade and their probable line of promotion, has been of great value to all concerned in connection with this work.

The best results are obtained when we merely state the problem in as nearly as possible the way in which it would be stated to the workman who is out on the job. For example, a wireman who goes to install a bell is not presented with a complete sketch of the whole installation, but, quite to the contrary, he is often shown by the lady of the house just where she wants the button, bell, and battery and is informed that he must get it in with as little muss and disturbance as possible. He then has to study the house as to construction, and makes his own layout, or, in other words, ''does his own thinking'' right there on the job. Why not teach a boy to work that way in school? It is perhaps better to present him with a set of typical lay-outs after, rather than before, he has completed the problems, for he will then look upon them as data which he has helped to gather and will appreciate their true worth. We use a good text and show boys how to study logically, building their knowledge of electricity on a good foundation instead of the hit-or-miss fashion. Many boys want to get right at motors and generators and if one is not careful, they will spend much of their time in reading those articles which are far ahead of what they can understand.

M. A CO-OPERATIVE COURSE IN VOCATIONAL PRINTING AT EVANSVILLE, INDIANA

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Since the Smith-Hughes law has been in operation, the source of material for printers' apprentices has been greatly enlarged. Boys between the ages of fourteen and sixteen years who are employed in printing offices naturally select the printing trade as their vocation in the part-time classes, and therefore automatically become candidates for apprenticeships upon arriving at the age of sixteen. These boys have most all been through the eighth grade or higher and are required to take four hours of study a week. Two hours of related work and two hours of shop practice are given.

The course in shop practice includes the layout of the case, laying case, picking up type, putting type in stick, setting type from printed copy, proof readers' marks and their use, reading proof, correcting type, distributing type, setting type from manuscript copy, locking up forms for job press, feeding the sheets, etc. This general knowledge of the fundamentals is considered a good foundation for the boy to enter the print shop for the beginning of an apprenticeship.

After a boy has been registered as an apprentice with the local union, he is required to take a course in the vocational department for two years of twenty-four weeks each—two hours a day, three days a week. This course comprises lessons in shop theory and practical lectures, printers' arithmetical problems, English and punctuation, and spelling.

As the first two years of the apprenticeship is probationary, much care is given to proper training. Both parties, the employers and journeymen printers, agree that this is the time to lay the foundation for the boy's future, and punctuality in attendance is regarded as essential. At the end of each month the boy is given a record card showing his grade in each subject. He is required to show this to his employer and get his signature. Another set of these cards is furnished the union and the grades are read at each monthly meeting.

If the student skips class and is marked absent, the chairman of the chapel where he is employed is notified and the boy must make a satisfactory statement to his employer concerning his attendance. If his grades become poor, showing a lack of interest in his class work, the local committee extends his apprenticeship time until he makes a satisfactory showing in his work or is dropped as incompetent. Full pay is allowed the boy by his employer during his two years of school work.

At the end of two years, if his school and shop work are satisfactory to all concerned, he is made an apprentice member of the union. At the end of this time he is required to begin the International Typographical Union course of instruction, which he must complete before the end of his fifth year.

The system followed in these lessons is essentially practical and progressive. Starting with a few simple instructions, easily grasped, the student is given a set of practical exercises which furnish an opportunity to apply the theory and rules to actual problems and thus fix them clearly and firmly in the mind. At the end of five years with this course of instruction, a boy should be well qualified to take upon himself the duties of a journeyman printer, and by diligence and energy be in line for promotion.

CHAPTER VII

TRAINING WORKERS IN INDUSTRY

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It is impossible within the limits of this chapter to give any adequate picture of the situation and the problems confronting those engaged in the task of training men with or without experience in an occupation.

All that can be done is to give consideration to certain outstanding points, which will be discussed under the following headings: (1) the probability of more training in industry; (2) national associations and vocational training; (3) corporation schools and vocational education as carried on by industrial and business establishments; (4) the work of organized labor; (5) limitations on publicly and privately controlled industrial training; (6) efficiency factors in vocational training; (7) instructor training for foremen; (8) success conditions for training on the job.

I. The Probability of More Training in Industry

While American industry seemed, as a result of the war, to have come to the realization of the value of some sort of organized training, especially on the basis of demonstrations of its value during the war, much less use has been made of those experiences than would have been naturally expected. Many plants that had developed definitely organized training work under the pressure of war conditions, have done away with this work, just as many organizations have done away with other specialized services, such as employment management of welfare work.

This was, of course, perfectly natural; the depression following the war, the reorganizations necessary to meet peace conditions, the situation with regard to employment, and many other factors all tended to bring about a restriction of activities and a cutting off of all but the most essential services.

While these things are true, they do not justify the conclusion that the value of the experiences gained during the war period has been disregarded or entirely lost. The question can be fairly raised at this time as to how far organized training is likely to be further developed in our industries as times improve, and as to whether the 'pick-up method' is still to be the chief dependence.

Of course, it is generally understood that any form of organized industrial training is merely a substitution of a more efficient device for a less efficient device. So long as we have turnover, promotion, or job shifts, training must go on. Organized instruction merely enables this training to be carried on more quickly, and with less expenditure of time and effort on the part of all concerned. That is all that it can do.

Looked at from this angle, there seems to be considerable evidence that, as our industries are gradually getting onto their feet again, the lessons of the war will not be lost. On the contrary, we shall see the development of more and more organized plans for the utilization of training.

This would seem to be probable for several reasons. It seems to be generally admitted that the cost of skill will remain at a higher level than in former years. This means that the cost of securing this skill must be reduced to the minimum. It means that the skill, when secured, must be of the highest type called for on the job. The restriction of immigration and the virtual stoppage of the flow of skilled workers from abroad, especially in the skilled trades, must, it would seem, force greater provision for training in this country.

Evidences of the recognition of this situation seem to be appearing in the degree to which national associations and labor organizations are now giving attention to the promotion and development of plans for securing effective apprenticeship training. It appears also in the degree to which many large corporations are developing comprehensive plans for training. It appears in the rapid development of trade extension work under public control, and in the increasing interest in the working out of effective co-operative schemes between trade and industrial schools and industrial concerns.

On the whole, allowing for the necessary drop due to the business situation, it would seem that the lessons of the past five years have not been lost. Organized training of some sort must find a greater and greater place in our industries, to meet the situation brought about through increasing labor cost, to meet lessened ability to draw on training given in foreign countries, and to meet the sad lack of provisions for securing necessary recruits for our skilled occupations.

All these conditions would seem to indicate that more, rather than less, organized training must come into the field of industrial production, as a definite device for effectively meeting certain economic conditions that must be recognized in the future.

II. National Associations and Vocational Training

As has already been pointed out, industry has of late tended to develop and operate its own training. One interesting development along this line is the extent to which national associations have undertaken to deal with problems of training.

A general survey of the situation as it now exists shows that, while a considerable number of national associations have undertaken some activity in connection with training, the methods adopted and the ends sought have been widely diversified. It is also true that the training activities of different associations are in varying stages of development. It can be said of many organizations that they have not progressed beyond the stage of propaganda or promotion of the general idea of training workers. While they are concerned with the situation in their respective industries, in their discussions and publications they have not gone beyond the stage of saying: ''Something ought to be done about it.'' They have not reached the stage where they have given serious consideration to what should be done or how it can be done. Other national associations, after an attempt to deal with the problem, have given up the idea for the time. An increasing number of national associations, however, are actively dealing with the problem.

The approach to the problem has been different with different organizations. Some, like the National Metal Trades Association, the National Hotel Men's Association, and the National Typothetae, have established definite training service departments. In these cases the national association has undertaken through a central office to furnish expert service in the preparation of instruction material and in the organization of courses of training. This service is furnished only to members of the association.

Another type of activity is that in which the national association has established co-operative relations with a training agency, as in the case of the National Association of Cleaners and Dyers. A third form of activity has been confined to the making of studies through the establishment of research bureaus. In some cases, however, the training service and the establishment and maintenance of the research bureau have been undertaken by the same organization, notably in the case of the National Hotel Men's Association.

Other national associations have confined themselves to the preparation of texts embodying the technique and practice of the occupation. In a few cases national associations have, through pressure brought to bear on industrial training agencies, such as the public schools, secured the establishment of training under public and private auspices. In such cases the training, while outside of the control of the national association, has nevertheless been determined by the association. In some few cases such a co-operative arrangement is working successfully. In other cases, the unwillingness of public training agencies to co-operate effectively has either seriously interfered with the efficiency of the work or has resulted in practical failure.

Another interesting fact is the type of training to which national associations have given consideration. Some of them have devoted their energies entirely to the promotion of training of college grade. They have taken the point of view that highly trained technical service is most needed, and consequently the best service to their industry can be rendered through the establishment of training courses in universities or engineering colleges. Other associations have concerned themselves with the training of minor executives, while still others have concerned themselves solely with the training of workers; this latter case is, for example, true in general of the present work of the National Typothetae.

Whatever may be the particular objective or the particular range of activity covered in the plans of different associations, the movement possesses significance to those engaged in the field of vocational training. It demonstrates, for example, the recognition of an unfilled need by the representatives of a large group of plants. For one reason or another, they believe training to be necessary in their respective lines. The steps taken by these associations should be regarded as a criticism, in a way, of the training thus far developed under public and semi-public control. The associations undertaking training service do so for either one or both of two reasons: they recognize the present level of knowledge and skill to be too low under present conditions; or they are concerned with the maintenance of their personnel through the training of recruits.

Those associations undertaking research work are concerned with the development of more efficient operations and processes. Whatever may be the actuating motive, the steps taken by an association show that its individual members need assistance and even stimulation. They also indicate a lack of faith in the training agencies now engaged in offering vocational training.

Unquestionably one factor which has led to the taking up of research and training by national associations has been the widespread belief that better training results in better morale. How far this has been a serious factor, it is difficult to say, but it has unquestionably carried considerable weight in many cases. Another factor has, undoubtedly, been a real or anticipated shortage of skilled labor. This is a condition that is always liable to exist to a greater or less degree in all industries, but it is held by many people that recent restrictions on immigration and the increased difficulty of securing skilled labor from abroad, have made the situation more acute, and have doubtless led to a greater interest in training by national associations of employers.

Whatever may be the actuating causes of increasing interest in research and training on the part of national associations, the fact must be reckoned with as one of the phenomena in the field of industrial training. It is true that in many cases this interest is confined to a few leaders in some associations, while the great majority of members remain indifferent or negative. It is, nevertheless, an important fact that associations operating on a national basis are more and more taking up the question of training and research conducted under their own control, and in many cases with the expenses entirely borne by the membership.

This is of vital importance to the plant man. Through national affiliations he can secure advice and assistance in developing training. He will do well to keep in touch with any activity of this nature which may be carried on by a national association representing his special line. It is of importance to the industrial school, public or private, because it indicates a failure on the part of such schools to meet a required need in training. In other cases it opens up opportunities for co-operation with an industry never before available. It is of interest to the student in the field of vocational education because it represents a growing movement which embodies vocational training carried on in many cases without regard to the possibility of utilizing training agencies already in the field.

III. Corporation Schools

These schools are operated by large plants, each for the training of its own employees, usually for specific occupations or phases of its work. Classes are held on the premises of the company. Commercial concerns, such as department stores or insurance companies, for example, operate classes on commercial subjects entirely.

Industrial concerns maintain either industrial or technical classes for workers, or commercial classes for the office force, or both. Many of these schools were organized into a national association of corporation schools, which has lately been merged into the National Personnel Association.

An article in the May, 1923, number of the *Vocational Education Magazine*, by Mr. Howard L. Briggs, Director of Vocational Education, Cleveland, Ohio, contains the results of a study of these corporation schools which justifies reprinting here.

VOCATIONAL EDUCATION AS CARRIED ON BY INDUSTRIAL AND BUSINESS ESTABLISHMENTS

Education in the past has been so closely tied up with the academic schoolroom that even those interested in vocational education are prone to view it from the public school standpoint. It is of interest, then, to learn the extent to which industry has gone in developing an educational system of its own.

The data contained in this paper were accumulated from letters, pamphlets, circulars, and house organs from representative industries scattered over the United States, received in response to a letter of inquiry sent out by the Department of Vocational Education of the University of Michigan, in March, 1922, to all Class A members of the organization then known as the National Association of Corporation Schools.

The purpose of this paper is to indicate the extent, method, and nature of the educational activities of the above companies. It has seemed to be more pertinent in listing the activities to mention the character of the business in preference to listing the firm name.

Upon pages 336-337 will be found a list of the industries studied. I have grouped their education programs under five columns. The first heading, ''Operating own school,'' includes activities from trade apprenticeship courses to correspondence work. The second heading, ''Co-operation with outside schools,'' includes expenditures for the maintenance of, or courses in, outside institutions, such as commercial schools, Y. M. C. A.'s, etc. It also includes active co-operation in sending employees to public evening and part-time schools. The third column heading, ''Education through house organs,'' includes company publications, by and for the employee, covering educational articles describing the plant, plant operations, related science, safety, health, morale, etc. The fourth heading, ''Referring to bulletins as an educational medium,'' includes cases where the company has definitely stated a policy of educating employees through bulletins and through bulletin board service. This includes health, safety, hygiene, morale, etc. The fifth and last column, ''Attempting no education of employee'' is self-explanatory.

In a few of the cases listed the activities have been curtailed, owing to the business depression at the time the inquiry was made, but the following list includes only the cases where a definite declaration of the intention to continue the work has been expressed. Some companies listed as carrying no work under some of the columns, or as conducting no work at all, have in the past supported an educational program, but for various reasons have failed to continue it.

Nature of company.	Operating own school.	Co-operating with outside schools.	Educating through house organ.	Referring to bulletins as an educational medium.	Attempting no education of employes.
Railroad			x		
Railroad	x		x		
Railroad	x		x	x	
Railroad	x				
Oil Company	x		x		
Oil Company	x		x		
Oil Company	x		x		
Oil Company	x				
Automobile Mfg.	x		x		
Automobile Mfg.	x		x		
Automobile Mfg.	x		x		
Automobile Mfg.				x	
Telephone Co.	x		x		
Telephone Co.	x		x		
Telephone Co.	x		x		
Telephone Co.	x		x	x	
Telephone Co.	x		x		
Electric Service	x		x		
Electric Service	x			x	
Electric Service	x	x	x		
Electric Service				x	
Insurance Co.			x		
Insurance Co.	x	x	x		
Insurance Co.			x		
Insurance Co.	x		x		
Insurance Co.	x				
Printers and Pub.	x		x		
Printers and Pub.			x		
Woolen Mills	x		x	x	
Woolen Mills			x		
Silk Mills	x	x			
Bank		x	x		
Bank	x		x		
Bank	x		x		
Pump Company	x		x	x	
Pump Company			x		
Pump Company			x		
Pickle Company		x	x		
Flour Company	x		x		
Packing Company	x		x		
Department Store	x		x		
Department Store	x	x	x		
Department Store	x		x		
Department Store	x		x		
Department Store	x		x		
Soap Company			x	x	

Nature of company.	Operating own school.	Co-operating with outside schools.	Educating through house organ.	Referring to bulletins as an educational medium.	Attempting no education of employes.
Soap Company		x	x		
Soap Company			x		
Electric Mfg.	x	x	x		
Electric Mfg.	x		x		
Electric Mfg.	x		x		
Steel Company				x	
Steel Company	x				
Steel Company	x				
Steel Company				x	
Steel Company	x	x			
Steel Company				x	
Steel Company				x	
Steel Company					x
Steel Company		x			
Steel Company					x
Cash Register Co.	x			x	
Vacuum Sweeper Co.			x		
Blower Company					x
Seating Company		x	x		
Filing System Co.			x		
Paper Novelty Co.	x		x	x	
Camera Company	x		x		
Boat Company			x		
Hat Company	x		x		
Tire Company	x		x		
Machine Mfg. Co.	x		x	x	
Lock Company	x		x	x	
Gas Company	x				
Electric Cable Co.				x	
Brass Company			x		
Locomotive Mfg. Co.			x		
Machine Mfg. Co.			x		
Watch Company			x		
Rifle Company	x	x			
Furniture Company	x	x			
Corset Company	x		x		
Pressed Steel Co.			x		
Air Brake Co.	x	x	x	x	
Milling Mach. Co.				x	
Drug Mfg. Co.				x	
Record System Mfg. Co.	x			x	
Silverware Company					x
Elevator Company					x
Fertilizer Mfg. Co.					x
Machine Company	x			x	
Chemical Mfg. Co.					x

SOME TYPICAL EXAMPLES

Companies Operating Own Schools

An Electric Service Company

Three schools are operated as follows:

1. The technical school offering courses in:
    - *a.* Mechanics and heat.
    - *b.* Elementary principles of electricity.
    - *c.* Direct current machines.
    - *d.* Elements of alternating current.
    - *e.* Alternating current apparatus and machines.

(These courses operate five evenings per week for twenty-five weeks. Night workers attend special courses two afternoons per week. It was found that students were much more interested in the laboratory work than in the theoretical. For this reason, four evenings per week are devoted to laboratory experiments following definite lesson instruction sheets, and one evening per week is devoted to lectures. One complete report is required each week.)

2. The commercial school offering courses in:
    - (*A*) Compulsory courses during business hours for employees of the contract and inspection departments.
        - *a.* Preparatory courses (English, Civics, Mathematics, etc.).
        - *b.* First-year course (Business English, Company History, Efficiency).
        - *c.* Second-year courses (Salesmanship, Company Policy, etc.).
        - *d.* Course for stenographers.
        - *e.* Course for telephone operators.
        - *f.* Course on effective telephoning.
        - *g.* Course for junior clerks.
        - *h.* Course for record and information clerks.
        - *i.* Course on personal hygiene.

(The above courses operate one and one-half hours per day, one day per week for seven months. A special eight weeks' course is maintained in the summer for those making under 75 percent.)

- (*B*) Special courses are given for other departments including:
    - *a.* Telephone operating.
    - *b.* Stenography.
    - *c.* For office boys.
    - *d.* For show room maids.
    - *e.* For porters.
    - *f.* Office work instruction.
    - *g.* Psychology.
    - *h.* Public speaking.
    - *i.* Telephone efficiency.
- (*C*) Evening courses.
    - *a.* Psychology (Voluntary for all employees).

3. The accountancy school.
    - *a.* First-year course (Bookkeeping).
    - *b.* Second-year course (Principles of accounting).
    - *c.* Third-year course (Accounting problems).

(This company has its own special teachers and uses department heads for special lecturers upon technical subjects. It also employs the services of the staff of an outside school of accounting for lectures upon this subject.)

(A house organ is published covering morale, safety, educational reports, etc.)

A Rubber Company

1. A school for deaf mutes.

(This company found that deaf mutes were exceptionally skilful in building and finishing rubber tires. They were assigned to tasks where the accident hazard had been practically eliminated. They were particularly adapted to jobs requiring keen sight and observation. They now employ five hundred deaf mutes.)

2. An extensive library of technical books is maintained.
3. A school for a 'flying squadron' of picked men.

(This is a three-year course for selected men preparing for executive positions.)

4. The industrial institute.
    - *a.* Special classes for foremen.
    - *b.* Special classes for inspectors.
    - *c.* Apprenticeship courses for the mechanical departments.
    - *d.* Commercial courses for office and sales.
        - Business arithmetic.
        - Economics.
        - Organization and management.
        - Modern business methods.
        - Business law and corporation finance.
        - Public speaking.
        - Mechanical drawing.
        - Mechanics.
        - Shop mathematics.
        - Electricity.
        - Rubber manufacturing practice.
        - Portuguese.
5. Americanization.
    - *a.* Reading, writing, and speech for foreigners.
    - *b.* Assisting aliens to take out naturalization papers.
    - *c.* Handling of affairs for foreign labor through expert interpreters.

(Classes are so arranged that any man, no matter what shift he is working on, may take advantage of the classes. Each and every man will find some classes which he is qualified to enter, irrespective of previous education.)

(The company maintains a house organ with articles furnishing instruction concerning the work of the various departments, reports of social activities of the employes, and general morale material.)

A Steel Company

(This company maintains a school of its own with separate building and staff. For a number of years they depended upon a local night school but found it inadequate in both scope and content.)
The following courses are offered:

Chemistry.
Metallurgy.
Physics.
Electrical repairing.
General accounting.
Cost accounting.
Arithmetic.
Shop mathematics.
Shop mathematics for apprentices.
Trigonometry.
Slide rule.
Tracing.
Drafting—general.
Drafting—trade apprentices.
Blue print reading.
Business law.
Industrial history and economics.
Salesmanship.
Customers' salesmen's course.
Filing.
Transcribing.
Shorthand.
Typewriting.
Telegraphy.
Business English.
Correspondence.
Foremanship.
Company organization and personnel.
English and citizenship for foreign-born men.
English for foreign-born women.
Business English by interplant mail.
Foremen's first aid lectures by medical staff.
Letter bulletins.

The total plant enrolment in the above courses is 1,613.

(The apprenticeship group receive pay during training very little lower than that received by journeymen. They work upon production jobs and attend classes two nights per week for which they receive regular hourly pay. Each apprentice is paid a bonus of one hundred dollars upon completion of the course and fifty dollars extra if he remains with the company for six months.)

(This company issues a typical house organ.)

A Department Store

(This store advertises the policy that it fills all worthwhile vacancies with its own employees through promotion and education within the store. All must pass a psychological test for general intelligence before being employed. Physical tests for health and sight are also given.)

The preparatory school.

a. Continuation school.

(This school is maintained for students from fifteen to twenty years of age. It is carried on during paid store time every Monday from nine to eleven, for three and one-half months totaling about 150 hours of instruction. The subjects covered are as follows:

Arithmetic.
Spelling.
Reading.
Local geography.
Hygiene.
Talks by store men on current political and business subjects.

(This school has an alumnæ association, graduation exercises, pins, monthly social meeting, etc.)

The training school.

a. The selling division, junior class.
  Salesmanship.
  Store organization.
  Store system.
  Color.
  Diction.
  Advanced arithmetic.
  Display.
  Store directory.
  Personal hygiene.
  Demonstration sales.

b. The selling division, senior class.
  Textiles group (Study of textiles, trips to mills, etc.).
  Non-textiles group (Special instruction).

(This section has a technical library and special instructors do follow-up work upon the selling floor.)

c. Executive training course.

(For those showing unusual ability in other classes. They are in line for promotion to such positions as heads of stock, assistant managers of departments, department managers, merchandise managers.)

d. The office division.

Comptometry.
Dictaphone operation.
Correspondence work.
Bureau of investigation training.
Mail order shopping.
Receiving clerk's work.
Entry clerk's work.
General clerical work. (Filing, sorting, etc.)

(This company also maintains a house organ.)

The nature of the work covered through the industry co-operating with outside educational agencies will be indicated by the following extracts taken from letters received from various companies:

A Soap Company

''As for the different agencies mentioned in your letter, we do not have any organized means for the technical training of employes. Our vocational schools in .... are excellent, and such employees as are sufficiently able and ambitious, make use of the public night schools.

''As to Americanization, the .... school department furnishes us with a teacher for our Americanization classes, which are held twice a week after working hours with a large and gratifying attendance.''

This company emphasizes the desirability of school attendance in its house organ, and announces the time and place of classes. They go on to state further:

''We have an industrial Young Women's Christian Association, with five paid secretaries, a Men's Club, a band, a Girls' Fife and Drum Corps, Benefit Association, Country Club for vacations, Girls' Dormitory for those whose homes are out of town, Auditorium, Bowling Alleys, Medical Department, Dental Department, Library with current magazines, and a branch of the .... Public Library.

''We have also an educational offer which provides the company's assistance for employees who wish to take night school work, and we have a rather unique offer providing that the company will provide any book for an employee who shows sufficient interest to read the book through twice and to write a synopsis of it.''

An Air Brake Company

Quoting from their catalog:

''The interests of this city are so clearly those of the air brake company that the Y. M. C. A. must stand as an air brake institution. The company provides the facilities for this part of the welfare work and the Y. M. C. A. provides the plan and supervises its execution. The large buildings housing the association were erected by the company. Today, nine teachers are required in the educational department to handle classes in scientific, commercial, and grammar school subjects. A special school for air brake apprentices is also included. The course followed provides eight hours per week class instruction for nine months. The regular shop hourly rate is paid while attending class, etc.''

An Oil Company

''In addition to the safety, personnel, Americanization, and other general work carried on by the various departments, the company has maintained for some time a correspondence course for employees covering business in general.''

The plant educating through its bulletins and bulletin board is typified by expressions like the following, ''Posters containing brief and concise messages of an educational character are distributed through the factory and placed in prominent places weekly.''

Some plants go so far as to have educational and morale messages sent out in the form of personal letters to the employees. Some enclose instructions in the pay envelope.

The house organ has proved a very popular method of promoting education within the industry. The following extracts from letters indicate the purpose underlying the publications.

A Card Record Manufacturer

''For the purpose of Americanization, morale, safety first, and general information for the welfare of the employees.''

A Department Store

''We found at the beginning in order to make a demand for our paper it was necessary to make it very non-technical and by degrees raise its level. We try to use it more and more as a means of carrying valuable information to our employees.''

A Suction Sweeper Company

''This publication is gotten out once a week and is intended to cover our community interests. We do not have an educational program but we put it across for the most part in an indirect way. You of course will see the purpose of some of the articles from the standpoint that the average employee does not see.''

A Maker of Filing Systems

''In our opinion there is no better way of reach our employees than through the factory paper, and you will note that the papers offer a variety of subjects such as safety, health, thrift, citizenship, etc. Personal items are the ones that seem to appeal to the workers—we secure as many pictures and cuts as possible as they immediately secure the interest of the writer in the reading matter that accompanies the pictures.''

The number of cases where no attempt has been made to educate the worker are so few that it is not necessary to deal very extensively with them. Even there a tendency to develop educational work within the plant is frequently manifested as illustrated by the following:

''We have no well organized system of training for our employees. We are trying to create interest in this direction through our Job Committee, who, as individuals, have expressed themselves as thinking it a wonderful undertaking.''

In Conclusion

It is very evident that industry has found an urgent need for further education of its employees. The extent to which industry has gone in organizing schools within private plants indicates a failure upon the part of the public school system to function satisfactorily. Only one reply expressed confidence in the public school system as a medium for vocational education. This company made soap and did not require many skilled workers. There are many instances where Y. M. C. A. schools, private commercial schools, etc. have been utilized by the various companies satisfactorily.

The educational devices utilized by the various companies have been influenced in part by the type of education required and by the size of the company in question. Many have erected a school building and employed an educational director and a teaching staff. The various department heads are utilized as lecturers for work of a particularly technical nature and teachers are occasionally called in from private vocational schools to assist. In states operating under a compulsory part-time law, the company prefers to have the teacher operate within the plant. This arrangement offers a splendid opportunity for the schools to 'get acquainted with the needs of industry.' The part-time group is considered in most cases as a preliminary course, however, and the real vocational work usually is given by the company teachers.

Bulletins, house publications, and other printed matter seem to serve as a medium for safety, health, Americanization and morale instruction. Their use as a device for definite trade instruction is limited both by the interest of the readers and the possibility of the printed page without class teaching. They seem to form an excellent auxiliary educational medium, however, for companies conducting definite schools, and in cases where the work is of a nature requiring little technical instruction, they completely meet the situation.

A study of the nature of courses offered by various corporations discloses a surprising variety of course content. The question immediately arises as to the possibility of the public schools undertaking such a task. The action of the public service companies of a large city in combining all of their schools admitting students from all the contributing companies suggests the possibilities of further economies obtainable by turning the whole problem over to the public schools. There is no reason why courses cannot be devised to cover the elements required in common by a number of employers. Further divisions could be made forming groups of advanced students covering the work of a still smaller group of employers, and finally, short units could be offered for each company group in the specific needs of that company under the direction of company lecturers and department heads.

The fault has been that industry has little faith in the academic school man and the attitude of many academic school superintendents in dealing with vocational education has verified their conclusions. The public schools of the future should at least meet industries' educational requirements up to the point of intensive specialization along individual company lines. We must secure the backing and co-operation of industry through 'delivering the goods' in the work that we are undertaking.

IV. The Work of Organized Labor

While organized labor has in general been greatly interested in industrial training, it has been mainly from a standpoint of apprenticeship; therefore the connection of organized labor with training schemes has been largely that of service to organizations making use of training schemes.

This applies to both publicly supported ventures and to training work carried on by concerns. The activities of organized labor in connection with training schemes carried on by shops or by public or endowed schools have been largely confined to such questions as: insistence upon standardized courses of training, adequate training, the limitations to be observed in the quota to be trained, and the conditions of admission to journeymanship.

It must be admitted that they have been more concerned thus far with the effect of vocational education upon their respective crafts, particularly from the standpoint of danger of overcrowding, than they have been concerned with the more intimate and detailed problems of effective instruction and training.

The last ten years have witnessed the gratifying development of a more favorable attitude on the part of organized labor toward the idea of industrial and trade training, particularly as carried on outside the shop through day or part-time classes and as carried on under public control.

The leaders in the labor movement have for a long time been favorably disposed toward the movement for industrial and trade education, and they are to be given much credit for their support of it nationally and for the legislation along this line. The task has been to convert the rank and file to support the advance steps taken by their leaders, and this work is well on its way.

Here and there throughout the country doubtless can be found scattered classes established and controlled by organized labor—established for giving instruction, but the tendency has been for these classes to pass under public control, once their need and worth has been demonstrated.

In the very nature of things this has occurred, because organized labor lacks the funds to carry on any extensive scheme of its own.

In passing it should be noted that there has been a considerable movement of late in the direction of the establishment of classes in general education under the direct auspices of organized labor. The national organization for the education of workers, of which Mr. Arthur E. Holder is director, has apparently been steadily growing in strength. The situation might be summed up by saying that in the field of trade and industrial education, organized labor is favorable to such work when carried on under public control, and is apparently well satisfied to have that phase of training so handled.

V. Limitations of Publicly and Privately Controlled Industrial Training

Industry has shown a constantly increasing interest in the development of schemes for substituting organized training on the plan of the so-called 'pick-up method.' This increased interest has been shown notably in the case of many individual corporations.

As a result of national legislation, there now exists in practically all states an organization and funds available for promoting and developing practically any form of industrial training. These public training agencies have come into existence through legislation based upon the general idea that industrial training could, and should, be given at public expense.

During the six or seven years since this legislation has functioned, while much has been done in the way of rendering efficient service to industry through publicly controlled agencies, on the whole, industry has tended largely to work out its own schemes independently of the public training organizations. This has perhaps been especially true in the case of large corporations and national associations.

In view of the facts that on the one hand free training service is available through state and local authorities, and on the other hand that industry is concerning itself more and more with problems of training, these questions become important matters: In what lines and to what extent can public training agencies now in existence render effective service to industry? To what extent and in what lines can industry secure the most efficient results by providing any desired training at its own cost and under its own ocntrol?

Until these questions can be answered to a considerably greater degree than they have been answered up to the present time, the situation remains inefficient and costly both to industry and to the public. If any industry can secure free of cost any form of training service that is effective from the standpoint of the needs of the industry and fails to take advantage of that service, it either does not get the service at all, or, by paying for it itself, introduces an unnecessary overhead. It is equally evident that if state and local authorities spend money, that has been appropriated for the purpose of providing efficient industrial training, for training that does not function, or for some form of educational work that is only a pretense of industrial training, the intent of the legislation is not met, and public funds have been expended for a purpose for which they were not provided. In either case, all the principles of efficiency and economy have been violated.

Of course, this statement is not new to the great majority of those who have been actively concerned with the development of industrial education. The situation is one that has been recognized as bad, both by those who represented industrial training through industry and those who represented public industrial training. Nevertheless, it is a picture of the general situation.

Various reasons have, of course, been given to account for this condition, such as, the inability of the public industrial educator to see the problems of industry, and the existence of a generally antagonistic attitude on the part of the industrial man to publicly controlled industrial education. Probably a more common cause than either is the idea that any sort of training that is free is, of necessity, poor. In common with many other things, training is often valued in proportion to its cost, and this notion has undoubtedly, in some cases, tended to discredit public industrial training with some industrial people.

As a matter of fact, however, while such ideas may have flourished in the past, they are not now, in the opinion of the writer, the primary cause of the unsatisfactory situation. Those responsible for the promotion and development of industrial training under public control are, in most cases, at least, sincerely desirous of rendering effective assistance to industry and of developing training that will be really efficient.

It is equally true that to-day any plant executive who is interested in developing training for his personnel will give careful consideration to proposals coming from public industrial training sources, provided they are concrete and workable.

At present, the cause of the difficulty does not lie here so much as in the fact that, up to this time, there has been altogether too little study of the limitations on both publicly and industrially controlled industrial education. Neither the representatives of public industrial education nor the representatives of industry have had any definite idea as to what sort of training could be effectively given at public expense under public control, and as to what sort of training could most efficiently be given under the control and at the expense of industry. There has been a lot of blundering on both sides, often due to ignorance.

A tolerably wide experience with conferences which included representatives of industries interested in developing training schemes has led the writers to believe that in many cases these industrial representatives are totally unaware of the fact that desirable forms of training or expert advice can be secured through such public agencies as State Departments of Vocational Education and the Federal Board for Vocational Education.

As an example of this failure to utilize public training agencies that can function, many concerns carrying apprentice schemes calling for a certain amount of classroom work have entirely ignored the possibility of securing this part of the training through co-operative part-time schools. As a result, the 'school' part of the apprentice course has often been poorly laid out from the standpoint of effective teaching. In many cases, the instruction has been very poor because it was given by men who, whatever their other qualifications, did not know the first thing about how to teach.

As an example of the same sort of blundering on the other side, school men have, in many cases, insisted on putting up courses that in no way functioned so far as any value to the industry is concerned. They did not know what the actual training requirements of the industry were or the conditions under which the training must be carried on.

More important, however, is the fact that those in charge of publicly-controlled industrial training have, in many cases, put time, effort, and money into attempts to provide forms of training that could not possibly be handled through public agencies any where nearly as effectively as the industry could handle them itself. There has been too much 'going out for business,' regardless of whether the 'business' could be carried on profitably.

Instances of various mistakes of this character could be multiplied indefinitely, but the underlying cause in practically all cases where the parties concerned were sincere was lack of information as to what can be effectively accomplished through publicly-controlled agencies on the one hand and by the industry itself on the other hand.

This is the real problem that now demands careful attention. If some such agency as the National Personnel Association or the Federal Board for Vocational Education would make a study of this matter, it would make a most highly valuable contribution to the promotion of efficient industrial training. It is to be hoped that some agency of this kind will soon undertake this work.

Meantime, through such studies as have been made, and such experiments as have been conducted, some facts have been fairly well established that have a bearing on this problem. It has been conclusively shown that expert operatives or mechanics can be effectively trained in how to 'put over' what they know, through 'instructor training' courses carried on under public control and at public expense. Any plant desirous of using instructors out of its own force or that wishes its foremen to act as instructors can get this particular training service free and can have this service better performed than the plant itself can do it.

Where a personnel man or other plant representative wishes to conduct training work with minor executives in his own plant, he can secure training for this work through public industrial training services. This has been fully demonstrated through the work of the Federal Board for Vocational Education and work of a similar character carried on by certain state departments, notably in New York, through which considerable numbers of plant representatives have been successfully equipped to do this work.

In the skilled trades there is no question but what full-time day schools can give training that effectively covers a definite part of apprentice training, and even the entire training of an apprentice. As a matter of fact, however, there are now in the country but a relatively small number of real trade schools that are doing this. The fact that it can be done has, however, been demonstrated. Still another field in which it has been shown that effective training can be given under public auspices is in work dealing with the improvement of foremanship and in preparation for foremanship.

The foregoing are some of the services that publicly-controlled industrial training has demonstrated that it can effectively carry on, and in these lines, so far as the possibility goes, industry should be able to secure such service free of cost. It must be frankly stated, however, that whether they can or can not be secured in any given state, or any given locality in a state, depends largely on the caliber and attitude of the state and local school officials.

On the other hand, it is extremely doubtful if there is any field for publicly-controlled industrial training in connection with specialized jobs. Such jobs might, of course, be taught in public classes, or, at least, in the plant by publicly paid instructors, but it is extremely doubtful if such work would pay, either from the standpoint of the plant or of the public welfare.

Again, it is, of course, obvious that any training dealing with the special technique of a given industry or with matters that deal entirely with plant or company matters, such as company policies or special processes, must be given by the industry at its own cost and under its own control.

Another matter that seriously affects the question is the size of the industrial unit. Take the case of a large corporation such as a railroad, for example, having a large number of plants in a number of communities or even in a number of different states, and having a central office control: it is extremely doubtful if the most efficient way to secure training is not, in most such cases, to handle the plan as a company proposition, drawing on the public training services for advice and suggestion rather than to depend to any great extent on local public training agencies.

On the whole, it is probably true that the small concern or the plant operating as a unit in some one locality is in a position to benefit most by opportunities for securing public training service. It is also true, however, that even the large corporation would do well to inform itself thoroughly as to possibilities whenever the establishment or extension of training work is contemplated.

All that can be done here is to draw attention to the importance of this problem. Until the choice between publicly and industrially controlled agencies for any given form of training is based on something more than guess work, so long as both the industry and the public representatives are largely in the dark as to "who can do what" to the best advantage, disappointing results are sure to follow. There will continue to be much 'lost motion,' lack of efficient co-operation, and failure to deal with given training problems in the most efficient way. The outcome will be corresponding excess cost, failure to use private or public funds to the best advantage, and dissatisfaction with the results. The problem is therefore commended to readers for thought and discussion.

VI. Efficiency Factors in Vocational Training

Before taking up any detailed discussion with regard to training of the institution, it seems desirable to point out the general fundamental conditions under which vocational education effectively functions wherever it may be undertaken. Unless these conditions are met, no form of vocational education can be effective, whenever or however conducted.

The primary object of any form of vocational training is to give the learner the necessary manipulative skill, to impart to him the necessary special technical knowledge, and to give him the ability to apply that knowledge intelligently in the practice of the special vocation with which that training deals. Manipulative skill is secured through adequate repetitive job experience under the direction and observation of an instructor. Technical information is imparted through instruction, either in the class or on the job.

Intelligence in the application of technical knowledge comes both through repetitive application experience on the job and to a certain extent through the use of suitable instructional devices outside of the shop.

Ability to profit by instruction. However well the practical or job experience may give training in manipulation, however well the technical knowledge may be selected, experience has demonstrated that satisfactory results cannot be secured with everybody. Hence the recognized principles that effective vocational training should only be given to those that can effectively profit by instruction. This fact should determine the selection of the group to be trained for a given occupation. In making this statement, I do not disregard the fact that, in common with all educative experiences, vocational training has valuable 'by-products' that function in general social adjustment and re-adjustment.

Use for training. While a proper training course, given to individuals who can profit by the instruction, should result in effective training, experience has further demonstrated that from the standpoint of its ultimate social value in the economic field, such instruction is efficient in proportion as it is given to those who will actually utilize that instruction, in that they will use the training for wage earning.

Minimal point for effective training. It is further recognized by all those concerned in vocational education that for any occupation the training must carry the learner up to a certain point of ability before he is desirable from the standpoint of that occupation. This training need not be sufficient to equip him completely for the occupation, but it must be sufficient to carry him up to the point where an employer is willing to employ him at a reasonable wage. This, of course, means that training which does not carry the learner up to at least this minimal point loses much of its value. While progress in the training will vary with the individual, nevertheless in a general way the time required to meet approximately these requirements for any given occupation can be estimated by those familiar with that occupation, and no training should be regarded as efficient that does not at least bring the trainee up to that point.

To summarize, we have, therefore, as the conditions of effective vocational training, a training course which provides sufficient repetitive manual or 'job' experience, which imparts the functioning technical content, and which aims at developing the job or occupational intelligence whereby technical knowledge can be applied, given to a group, all of whom are able to profit by the instruction, and carried on for a sufficient length of time to equip the members of the group to meet the minimal employment requirements of the given occupation. In addition, the best conditions are met when this training is given to a group who will use the training as a wage earning asset.

Above statements general. This brief statement is, of course, perfectly general in its character and applies to all forms of vocational training, wherever and however given. It makes no difference whether the manipulative training is secured in a school, a shop, or on production jobs. It makes no difference whether the technical knowledge is picked up or is given in some organized way. It makes no difference whether the selection of the group is predetermined or whether it comes through accidents of employment and incidental recognition of need. The training as ultimately secured will be efficient in proportion as the stated conditions have been met.

Value of organization. It is also true, however, that, from the standpoint of expenditure of money, energy, and time, any vocational training course can be so organized as to give the maximal amount of training in the minimal amount of time. Experience has shown that much of the technical knowledge can be imparted best through some form of organized class instruction, while some other parts can best be given at the time that their application is called for on the job, and that these proportions vary with different occupations. Experience has also shown that more satisfactory results are obtained if the manipulative training is secured through participation in actual production jobs, as distinguished from exercises.

Experience has shown, further, that this technical knowledge is so different in different occupations that there is little, if any, common basis for instruction, so that the trainees for different occupations must be handled in separate groups, not only in the shop, but also in class work. Many attempts have been made, for example, to conduct general classes in shop mathematics or shop science, where the membership of these classes was made up of trainees for different occupations. This work has proved unsatisfactory in two ways: first, the general character of the subject matter has not, and could not be applied directly to the actual problems of the occupation; second, much of the technical content of each occupation is so specific in its character that it cannot be treated in a mixed class. For both of these reasons, attempts of this character have not been successful.

General vocational subjects. It is quite true that there are a number of subjects that are general assets to a worker in a group of occupations. For example, a machinist never has occasion to make a mechanical drawing, and this would be equally true of a pattern maker or a house carpenter. It is undoubtedly true, however, that a certain command of this subject, which is the general language whereby the designer communicates with the constructor in all wood and metal working trades, is an asset to any worker in these trades. It would not be an asset to a printer, or a tiler, or a milliner. On the other hand, the knowledge and command of color, harmony, line, balance, and form which does enter into the trade assets of a printer, dressmaker, or tailor would not be of any occupational value to the machinist, the carpenter, or the pattern maker. In these so-called "general vocational subjects" there is unquestionably an opportunity to bring together mixed groups. The make-up of these groups is determined according to the occupations in which such general vocational subjects function.

VII. Instructor Training for Foremen

Among the results of the interest in foreman training has been the recognition—one might almost say the discovery—of the importance of his function as an instructor. It is now generally recognized that, in spite of the development of specialized agencies for providing industrial training, such as plant training departments, part-time schools, or trade extension classes, the great bulk of the industrial training given in industry is given, and must continue to be given, by foremen, and given on the job.

Hence, among the ten or twelve types to which all forms of foremen training can be referred, we find one type whose purpose is to equip foremen with such parts of the teaching trade as will enable them to instruct more effectively; that is, instructor training courses for foremen.

That the introduction of improved methods of instruction is of value to industry is unquestioned by all who are at all informed upon the matter.

Experience up to date has demonstrated that, when properly conducted and organized, instructor training courses for foremen can be expected to give many or all of the following results:

1. A more intelligent handling of new workers during the learning stage.
2. A shortening in the time required to train new help.
3. Much more efficient instruction, in the sense that it is more thoroughly grasped by the learner and is more intelligently applied on the job.
4. A more complete assimilation of instruction by the learner, so that he continues to carry on the work as he was taught.
5. Reduced friction, accident, or damage due to the giving of incomplete instruction or to instruction that was not fully grasped by the learner.
6. A better assignment to jobs with regard to the worker's past experience and individual ability.

7. As an indirect result of better instruction, there should be a reduced turnover, though it is only fair to state that this statement is based upon indications rather than upon absolute proof, so far as present experience goes.

While the general statement can be made that wherever foremen or other executives have instructing responsibilities, efficient instructor training courses will give such results, there are certain conditions where such courses are particularly serviceable, among which are the following:

1. In seasonal trades where a skeleton organization must train a large number of new workers at the beginning of each season, as in fruit canneries, many of the building trades, etc.
2. Where there are frequent changes in the prescribed way in which jobs are to be done (as where an efficiency department is constantly working out more efficient ways of doing jobs and these procedures must be 'put over' to the working force).
3. Where there is a high turnover among new workers.
4. Where there is excessive production spoilage, owing to improper methods used by the workers.
5. Where thoroughly competent labor is difficult to secure and the force is being expanded.
6. Where it is recognized that the instruction cost is high, owing to lack of the use of efficient methods.
7. Where the jobs are special jobs carried on only in that plant, and hence, workers already trained on those jobs are practically unavailable in any number. This might be true, for example, in a plant making buttons from vegetable ivory, turning out special forms of lubricants or abrasives, or in a canning factory.

As would be expected, with the recognition of the value of better instruction, a number of instructor training courses for foremen have been developed which, like all such courses, have varied in the time required for completion from less than one hundred hours to two years and in content, from assumed absolute essentials, to general psychology and the history of vocational education. The situation has developed to a point where it seems worth while to draw attention to at least one danger that may affect the further development of the work.

This danger lies in the fact that those developing many of these courses have often failed to recognize the difference between the characteristics of the instructing job of a foreman and the conditions affecting the work of a regular industrial instructor, employed for instruction only and usually giving instruction in a school. As a result, ''instructor training courses'' have been given to foremen which were developed to equip prospective instructors in regular vocational schools, and considerable material has been included in these courses which is of little or no value to a foreman under his working conditions.

In considering how much instructor-training a foreman can use (and hence the essential elements in a foreman's instructor training course) certain facts must be borne in mind. First, under almost all conditions his instruction is incidental and supplementary. Only in the case of green men is he required to put over a complete teaching unit. Second, it is 'sandwiched in' with his other supervisory and managerial duties; he gives it where he can and as he can. Third, he rarely has to instruct in a regularly organized, progressive course consisting of a series of jobs arranged progressively with the accompanying technical knowledge. He gives an 'old' man a few pointers, and perhaps instructs some 'new' man on the special way in which some production job is carried on in the plant. Fourth, his instruction deals almost entirely with individual jobs and the immediately related technical knowledge. Fifth, his instruction is individual. Sixth, his schoolroom is the shop floor.

Under these conditions a foreman can make little, if any, use of training in setting up a progressive training course by jobs, nor is he likely to have use for lesson planning, two subjects to which much time is commonly devoted in instructor training courses. Neither is he concerned with class or group organization and problems relating thereto.

Under these conditions, he cannot be expected to be an expert teacher, nor is he likely to be able to use the finer points of teaching. His instructing work must be more or less a side line for him, and if it becomes more than that, economy and efficiency indicate the desirability of setting up some definite training organization to take over this work.

In the opinion of the writer, an ''instructor training course'' intended to equip foremen to teach *as foremen* would be fairly adequate if it were confined on the basis of minimal essentials, to securing the following:

1. A general command of the instructing process, including the function of the four steps; the difference between informational and development lines of approach; an understanding of the two or three applicable methods (use of questions, demonstration, illustration) sufficient to cover these points in instructing on any given job.

2. A recognition of the differences between learning and production difficulties as they affect instruction on a given job.

3. An understanding of the differences between the mental attitudes of the different sorts of learners with which he deals (old hands, new men, green men, etc.) and the fully competent worker.

4. The ability to make a content analysis for a given job.

Such a course would evidently require much less time than even a 'short' instructor training course and would cover practically all the points on teaching which a foreman could actually use on the job. Such a shortening of the work is desirable, with the limited time usually available for foreman training, since no unnecessary time should be spent on any phase of foremanship work, provided the actual needs of the situation are met, and everything included in the work should be of direct and immediate value.

In all teacher training courses designed to prepare men having industrial experience for teaching, the tendency has been to include much material which, while it has value, is not essential. This has resulted in extending the period of training over too long a time. In addition, some of this material has been too abstract or too academic to be of service to the type of individual taking the work. The result has been confusion, discouragement, and a feeling that the training was of little value on the job. This is bad enough with prospective 'regular' instructors, but is fatal with foremen, since, in most cases, they must be 'sold' on the whole question of the value to them of any training in teaching technique. It is therefore highly essential that instructor training courses for foremen should give only what will actually keep them on the teaching job under the conditions under which that job is carried on.

VIII. Success Conditions for Training on the Job

In order to give successful industrial training you do not need a separate building, separate equipment, and a separate corps of teachers. It can be done that way successfully and is being done that way successfully in many places. It can be done, however, in the shop itself through employers or through unions, and through either one of those agencies co-operating with the other or with schools, provided all such conditions as the following are met:

1. You must know what you are trying to do and be able to set up your course of study in terms of a direct aim. That aim may be preparation for a certain grade of wage earning, a certain occupation or occupations, or a certain grade or level of apprenticeship as a beginning.
2. Your shop in which the training is done must do work under real conditions, with real machinery and real processes. This is equally true whether the shop be under the school roof or operated for profit as a commercial enterprise.
3. Those who teach, whether they be foremen or teachers in an industrial or trade school, must be persons who have had successful experience in the processes they try to teach others.
4. You must have incentive on the part of the student body to take the work, whether they are workers in a shop or factory, on a farm, in an office, or students in a vocational school.
5. Finally, you need to set up relations with the outside world so as to insure a market for your product of trained people after you give them the instruction you have planned.

There are five problems that must be met in order to operate successfully a training scheme within a correctional institution anywhere. The first has to do with the choice of a training plan; the second with the reality of the experiences or teaching given, the third with the production system of the scheme; the fourth with the personnel of its instructors; and the fifth with incentives for taking the training earnestly.

As a matter of fact, millions of wage workers of this country have not only learned to do their work on the job, and in no other way, but they have done this without the advantage of any organized, systematic instruction to shorten the process of learning and advance their proficiency. This requires only that competent officers teach the men of their shops skill and knowledge in the processes at which they work.

The Personnel Problem

Everywhere the drift is toward the more effective training of men in occupations. Many of these occupations are not taught in schools and can not be taught in schools. Furthermore, there are very few schools to teach even the limited number of occupations that have been found feasible under the roof of the separate school.

Consequently, employers are trying to establish effective methods of training men on the job. This means either that the regular foreman in charge of the work must become the instructor; or that he must organize the scheme so that the most capable employees give under his direction this instruction or aid him in giving it to the novice; or that a separate instructor or instructors be employed on the staff to go about from shop to shop to do the work. Personally, I believe that the hope of small shops at least lies in making the foreman both a successful instructor and a successful user of the help of the more capable men for the instruction. But the major responsibility rests on him.

The first step, therefore, to my mind, is the winning of the foremen in charge of shops to a more effective program of training the workers in the shops under them. Doubtless at the outset of such a program such things as the following will be found. Some foremen will be opposed to the whole matter. They need to be won patiently and diplomatically. If they can not be won, they should be displaced by those who are interested in the opportunity and in the problem. The rights of men to training in the shop for better service should rise above the prejudice, the convenience, or the right to a job on the part of any employe of the institution.

Some foremen will be found incapable of rising to meet the new duty and responsibility. They are entitled to a fair chance to demonstrate what they can do. When they fail, they should give way to those capable of discharging the task in the right way, and for the same reason set forth above.

Many, if not most, of those employed as foremen in shops are interested or will be interested and are capable. This is the nucleus with whom the work should be attempted. They are a precious asset to the concern using them in this way.

If this training responsibility is to be put upon foremen, it is only fair to them that they should be trained in some way to discharge this new responsibility, and the training must be done by some one who has had long experience in such foreman and instructor training with the foremen of manufacturing establishments.

There are two ways in which this task can be accomplished by a shop. Both are wise. Which one shall be employed depends upon conditions.

One way is to pick out one shop where there is a capable man interested in the problem, and get him to set up a training scheme in his shop. In this way his department will learn by experience and establish a type of what can be done that may be spread from shop to shop.

The other way is to take all the instructor foremen at the start; hold classes with them; help them to analyze their problem; select the training points; arrange the activities and experiences to be given in a progressive order; utilize training facilities effectively; and employ effective methods of training.

In either case there is need for some person in the force who knows, or can be brought to know, how to do the trick, and who will be the leader of the group in handling it. I am of the opinion that the training of foremen instructors should be done by the conference method, whichever one of the two schemes is employed.

CHAPTER VIII

DEVELOPMENT OF MEASUREMENTS IN VOCATIONAL INDUSTRIAL EDUCATION[1]

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The industrial revolution of the past one hundred years has made marked changes in the industrial and social order. It would be entirely impossible and unnecessary to trace all the steps in the transformations which have occurred. The writer will call attention to a few rather special aspects which have to do chiefly with the adjustment of labor to new types of work and to the psychological significance of the general status of labor. It is probably true that, aside from the problem of selecting a trade or occupation suited to his abilities, the workman has certain attitudes and points of view which are worthy of careful study as to their genesis and their influence.

The successful use of steam in water and in rail transportation was hailed as a splendid culmination of effort in the perfection of trade communication. The crude steamboats and wheezy locomotives which were symbols of perfection have been left more than decades behind in the greater speed and reliability of the modern ocean liner and the superheated and automatically stoked locomotive. The transformation has followed the same trend in every line of improvement and invention. It carries with it some striking psychological effects. To the inventor it brings an incentive to reach greater heights as quickly as possible. He sees the imperfections of his first crude efforts and sets about making corrections at once. To the layman it brings re-adjustment to his methods of living and of working. He has learned something new; he has to think along unfamiliar lines, and his conservatism tends to make him a foe to progress. He laboriously climbs the ladder of industrial revolution, hoping that each rung will be the last, for each one is a painful step. It is true that very often a step will be easy and surprisingly pleasant in the advantages which it brings to him, but innovations and re-adjustments are the rule rather than the exception in progress. These tendencies cannot be ignored in dealing with the problems of industrial education, since they motivate the unrest among the laboring classes to-day.

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[1] See also Chapter VIII in Section I on objective measurements in educational and vocational guidance.

If one studies the history of industrial development, one may possibly feel a desire to criticize the historian who in his enthusiasm paints such a glowing picture of new discoveries that the millenium seems to have arrived. Then another invention comes along and brings another millenium; then another invention, and so on. By the time the present has been reached and the historian is finished, his stock of super-superlatives has been exhausted, and the tacit assumption is made that the end of possible improvement has also been reached. But improvements continue to be turned out at a startling rate, and the average worker has extreme difficulty in adjusting himself to a dynamic rather than a static and self-satisfied point of view. The end has not been reached and probably will not be reached soon in the evolution of industry. Society has lagged behind and adjusts itself slowly by the process of trial and error. The writer is concerned chiefly with the adjustments of workers to the situations which obtain in industry. His thesis is built around the idea that such adjustment is a matter of careful analysis of individual requirements and a scientific inventory of industrial abilities, so that industry may function more effectively and workers may labor more happily at occupations suited to their tastes and abilities.

Tendencies in Industrial Placement

The individual has paid a dear price for the changes which have come in industrial progress. The modern methods of shoe manufacture, for example, were hailed by efficiency experts as a last word in improvement. But the workman who had been working contentedly on small scale production under the friendly eye of the small shop owner, underwent also a revolution in his personal life. He is no longer apprenticed to his master; he does not board and lodge in his master's home; he is removed from the community which he had known from boyhood. He is not only removed from his community, but also from personal contact with his employer. The mere difficulties of finding suitable lodging and some social contacts have an unfavorable effect upon him. At best, he is decidedly unsettled.

The employer also has had difficulties which are apt to be overlooked in society's greater sympathy for the laborer. He conducts business on a large scale, and to his own dissatisfaction, also, he delegates the supervision of his employees to others. Some rather unsuccessful attempts have also been made by well-intentioned employers to delegate personal interest. Such an employer knows little about the efficiency of individual workers, and believes a great labor turn-over inevitable. It must also be said that he frequently has an unscientific point of view; he does not believe in, and is unfamiliar with, modern methods of personnel selection. The chances are that he may have already paid a handsome sum to a so-called ''efficiency expert on personnel.'' After such experiences, he cares for no more expensive innovations at the employment office. In such instances re-education to a more favorable point of view is a doubly-difficult task. While it is known that here and there the problem of personnel is being handled intelligently, it must be admitted that the traditional point of view holds in the main.

Happily for industrial education, the industrial problems facing army officials in the late war presented an acute situation in personnel. Men were needed not only as soldiers in the trenches, but engineers were needed as well to plan bridges and roads; carpenters were needed to provide housing facilities; electricians were needed to provide communication which would not fail at critical moments. Not only was there a great shortage of labor of all kinds, but there was little or no time to train workers on account of the urgency of the tasks at hand. It was found very unsafe to take a chance with the mere word of an individual that he was skilled in any given occupation. In some cases the individuals really believed they were qualified for jobs they applied for. Others took a chance, trusting that their inexperience would be overlooked or undiscovered. Two alternatives were presented: first, follow the haphazard methods of employment used in industry; second, attempt a scientific plan of personnel selection. By choosing the second alternative, experimentation in the various fields of industry with respect to personnel was suddenly thrown open to scientific study under the guidance of army officials whose activities were not bound to tradition, and who were vitally interested in quick and effective results.

It was generally recognized that the personal opinion of employment managers, colored chiefly by personal likes and dislikes, was not a safe criterion to judge the efficiency of a worker in a given trade. It was also known that personal self-estimates of ability by prospective workers were unreliable and undependable in many instances. The problem then centered chiefly around how to eliminate the employment manager's opinion by means of standardized examinations, and how to verify the worker's self-estimate by comparable norms on the tests which were to be used. The processes of selection of test material and arrangement of items and testing technique were phases of standardization. Test items were suggested for workers by shop foremen and by experts who knew their fields. The arrangement of order of items was made after checking the percents of success on the correct answers to the questions, ranging in most instances from very easy questions which all men could pass to those so difficult that only the highly specialized could answer them. The testing technique included standardized instructions for giving the examinations in exactly the same manner to all candidates. The same time-limits and explanations were used for all examinations on any particular test, and the same methods of scoring were employed.

After the scores, or results, had been compiled for a larger number of individuals, the actual ratings, or scores, earned by men of known experience and proficiency in the industrial field were found by administering the tests to them. These ratings were then divided so that the four stages of proficiency—the novice, the apprentice, the journeyman, and the expert—were clearly indicated.[2]

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[2] For a complete description of the scientific method in army personnel, see J. Crosby Chapman, *Trade Tests*. New York, 1921.

Chapman enumerates four different types of tests which were developed as follows: (1) the oral trade test; in which the applicant answered orally a set of standardized questions about the occupation or trade in question; (2) the picture trade test, in which the applicant had to explain the function of various parts of machines illustrated to him by pictures or prints; (3) the performance trade test, in which the applicant had actually to perform a standard operation on a machine; and (4) the written group test, in which the applicant had to read and answer in writing standardized questions about the trade. All these tests yielded objective scores and could in most cases be administered by a clerk or examiner otherwise unskilled in the particular trade or occupation. The objectional features of the former methods of personnel selection were eliminated to a large extent by this standardized procedure.

The *trade test* is an important device for determining the efficiency of applicants for positions. *It is a tool for measuring efficiency already attained in the field,* and performs a very important function in that respect. There is nothing in the trade tests, however, to indicate the desirability of *choosing as a vocation* any particular trade. The employer can use the trade test somewhat selfishly to select workers already proficient in his line. The vocational counsellor is faced with the larger problems of deciding suitable suggestions for all pupils and not for a selected and favored few. This situation is no disparagement of the trade test.

A different type of analysis of trades is being developed, which carries information as to the particular trades in question. The reader is referred to three volumes on occupational analysis entitled "Opportunities and Requirements in Local Occupations,"[3] prepared and edited by A. H. Edgerton and others, for the guidance work in Detroit, Michigan. While this information applies to local industries, the analysis of trade requirements is sufficiently general to be of great value wherever the same trades are found. The methods of analysis[4] are equally as significant as the particular analyses, for they suggest a similar technique to be followed by other workers in other cities for their own local industries. Bulletins by the Federal Government and by the University of California also carry this general type of trade information.

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[3] Published by the Detroit Board of Education, 1922-1923.

[4] See also Chapter III for a detailed account of trade and job analysis as an aid in curriculum building.

The tendencies toward a scientific attitude in industrial placement advocated by agencies outside of industry itself must necessarily work under somewhat of a handicap. It is difficult to get the intimate contacts with the machinery of industry which are fundamental to the most efficient results. Furthermore, suggestions made by outsiders are apt to be treated mercilessly if any slight defects or errors are found in them. It may be expected that when methods which are truly scientific and removed from the meshes of quackery have been adopted by industry itself, industrial efficiency will be forthcoming. In the meantime, excellent progress is being made in the experimental laboratory, and industry is becoming more willing to learn from acquired information as well as from bitter experience.

Tendencies in Industrial Education

Although industry has been slow in adopting the scientific method for the selection of personnel, education has also been lax in preparing its output for proper industrial placement. Such negligence was due in part to lack of contacts, and in part to an erroneous, but common belief that any pupil could be trained for efficient production in any trade or profession. In fact, conditions of instruction were made so uniform that universal preparation (or perhaps lack of preparation) may have been expected.

The first beginnings in a more fruitful approach have been made with the discovery that all individuals are not exactly alike with respect to the work which they can best perform. The full recognition of differences in innate ability has come largely through the use of general intelligence tests. The extent of such differences in children and in adults has already been discussed in an earlier chapter. Without attempting to explain fully the significance of such differences, discussion of the extreme types may be stated briefly.

Consider what would happen in society if the man capable only of unskilled labor under moderate supervision were to trade places with the physician or with the attorney. In his training he would be found incapable of mastering the necessary education. Or, granted that the training were possible, he would be unable thereafter to compete successfully with the other more gifted members of his new profession. He would be decidedly unhappy, also, to say nothing of the menace he would be to society. On the other hand, the man of high intelligence would find his labors decidedly distasteful in his unskilled work. He would have no exercise for his mental talents, and the lack of stimulus from contacts with other workers of his own mental level would be unfortunate, if not disconcerting. Aside from the fact that the particular work in which these two would find themselves, their social status and manner of living would tend to make both of them unhappy. The same conditions would also be true in lesser degree if men in other trades which demanded less extremes of intelligence were to trade places.

The mental differences which are known to exist in adults are to be found also to a certain extent among children. These differences affect pupils' progress in school and also determine in large part the different types of social relationships which are known to exist in society. Segregation of pupils differing in mental ability and in its correlated qualities is now being attempted in many public school systems. Through segregation, the tendencies of the different groups may be studied more effectively. Under the former plan of heterogeneous classification, the few exceptional cases which were known to exist in classes were considered to be in such a small minority that they were insignificant and unworthy of special study and analysis. Under the later plans of classification, the significance of intelligence, personality, application, etc., is being taken into account in planning the program of vocational guidance.

After a period of feverish experimentation with intelligence tests as a cure-all for educational ills, the scientific study of tests of special aptitudes was undertaken. With its inception has been initiated a new series of tests which promises to be as far reaching and comprehensive as the application of standard tests within the past decade and as significant as the development and use of intelligence tests in the past five years. Only a few of the representative aptitudes tests will be mentioned here.

J. L. Stenquist has devised two forms of *mechanical aptitudes tests* particularly suited to boys.[5] Test I consists of six exercises with ninety-five operations involved. In pictorial form are shown parts of bicycles, telephones, radio sets, autos, and a large variety of mechanical devices. These are presented in small parts in disarranged order, and the subject is to indicate how the parts are related by matching the various pairs of objects. For example, an auto tire pump labeled "3" is matched with an auto tire labeled "A." The "3" and "A" are matched together in the column provided at the right of the page. This test has a work limit of forty-five minutes. "T" scores and percentile norms are provided for ages ten to fifteen, inclusive, for both Tests I and II. Test I is well adapted to pupils of limited mental ability or even to cases of language difficulty, as well as to normal American children, since it is pictorial and constructed upon simple principles.

Test II consists of three exercises. Exercise I is similar to Test I. Exercises 2 and 3 consist of complete mechanical units, such as an electric door bell and a job crane. The various parts of these units are labeled with letters and the subject is required to answer written questions about the functions of the various parts of the unit, such as "Which part is the electro-magnet?" Reading is necessary, although the terms and vocabulary are as simple as possible. The author reports a correlation of $r = .84$ between scores and shop and science teachers' estimates of general mechanical aptitude. Performance on the tests is not affected very greatly by shop experience, since general aptitude for mechanics has stimulated an interest in mechanical devices which reaches far beyond the work bench in the schoolroom. The author has reported further that there is little or no correlation between scores on the aptitudes' tests and scores on intelligence tests. The various combinations—high intelligence, high mechanical ability; high intelligence, low mechanical ability, etc.—offer some very specific suggestions to those who are responsible for vocational guidance. These tests are very well planned, and the process of standardization is commendable. They are certain to fill a long-felt need. They are also typical and suggestive of similar efforts in other fields.

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[5] Published by the World Book Company, Yonkers, N. Y.

The *Thurstone Clerical Test*[6] consists of eight parts: error checking in fundamental arithmetic processes; error checking in spelling; cancellation test; letter-digit substitution test; classification of men by cities from a mixed list; classification of insurance policies with respect to amount, date, and kind; arithmetical problems; and matching of proverbs. While this test seems to have a higher correlation with general intelligence than the Stenquist tests, it also measures special aptitudes for taking exceptional pains with detailed work.

The *Freyd Journalistic Aptitude Test*[7] consists of nine parts: checking the most important of two statements from the standpoint of best news; checking the best of three answers to problem situations facing a reporter; a completion test to be supplied from a story read by the examiner; selection of exact meaning of words; correcting misspelled copy; knowledge of antonyms; accuracy of report on an automobile accident from a picture of it; an information test; and a test of grammatical errors. While ability to pass this test with a creditable score is very dependent upon general intelligence, a certain type of judgment is required in qualifying for newspaper and journalistic work which is not found in all types of high general intelligence. The test shows that its author is familiar with the type of work expected from the journal worker or the cub reporter.

A very complete and recent work on tests of aptitudes is by Herbert A. Toops.[8] The tests are divided under three heads: (1) ability with ideas, the I. E. R. Arithmetic-Reading Test or any standard tests of general intelligence; (2) ability with things, the Stenquist Assembly tests for boys and the I. E. R. Assembly Test for girls; (3) ability with clerical items and procedures, (a) higher level, the I. E. R. General Clerical Test, C-1, (b) lower level, the

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[6] Published by the World Book Company, Yonkers, New York.

[7] *Jour. of Applied Psych.*, March, 1921.

[8] *Tests for Vocational Guidance of Children Thirteen to Sixteen.* Teachers College Contributions to Education, No. 136.

I. E. R. Test, C-2. In his introduction the author says: ''One of the greatest services of vocational guidance to children from thirteen to sixteen is to direct away from commercial high school, business colleges, and office work, those who have little or no chance of usefulness and happiness there. It will be very much safer to do this by the aid of the clerical tests than on the basis of an intelligence test alone.'' The extent to which correlations and other statistical devices were brought to bear upon the test results show how thoroughly Toops has attempted to isolate and evaluate single factors, and speaks highly for the importance of the investigation. After following through such a detailed study, one can scarcely be otherwise than optimistic that the possibilities of correct and trustworthy prognosis are very great and that the day of their realization is much closer at hand than any of us have hoped for or believed possible.

Co-ordination of Vocational Education and Industrial Placement

The tendencies toward the scientific method in industry and also in vocational education have been briefly reviewed. There remains for consideration the manner in which the work in these two fields may be correlated, so that the pupil in school may be trained and fitted to function properly in industry. The beginnings of this program are to be found in the classification of pupils upon first entrance to school under the various categories which are apt to affect his career. By the time the junior-high-school period is reached, the pupil should be so classified that he is getting definite training and direction along the general line of activities which he is to enter.

In order that the pupil himself may be considered by the counsellor, rather than merely the objective evidence about him, opportunity should be given the pupil to discover for himself his place in a level of occupations suited to his abilities. To this end there are being developed in many junior high schools so-called ''finding courses,'' in which the pupil is given opportunity in the course of a year to try half a dozen or more occupations. The material and content offered in these ''finding courses'' are an excellent example of this development. ''Finding courses'' should be arranged so that pupils will have experience with at least six or more trades or professions. After the pupil's choice is made tentatively, further opportunity should be offered for study and observation in his chosen field. Many objectives and qualifications of trades should be reviewed with sufficient emphasis that the pupils may make a fair choice and not be too easily influenced by merely superficial features of any trade.

The schools should have an information and placement bureau which enjoys the confidence of the pupils and also the closest cooperation of the employment agencies of industrial firms. The Cincinnati plan of having pupils alternate two weeks in school with two weeks in the factory serves to bridge a gap which has been dangerously wide at many points. A follow-up worker, who can adjust minor difficulties, should be in charge of pupils of low mental ability or unstable mental constitution. Verification of the school's diagnosis and the training of pupils along vocational lines will be carried on eventually to a high level of efficiency.

METHODS OF ANALYSIS

In order that the placement of the pupil should be in the light of complete information, not only should the results of the ''finding courses'' be used, but also the cumulative information gathered in detail throughout the pupil's school experience. Results of intelligence tests should be utilized, as well as records on educational tests, teacher's ratings, and scores on special aptitudes tests. These objective data should also be supplemented by ratings in socialization, leadership, and personality. Noteworthy incidents in the family history should be recorded. The development of rating plans and tests for all manner of traits will be undertaken in the near future so that the records may be definite.

The counsellor will have a complete and full report of the pupil's aptitudes and of his disabilities. There will follow from such records, experimentation upon all the significant factors in human existence which may influence the career of the future citizen. The attempt to eradicate undesirable traits should follow upon their exact measurement. Can selfishness be eliminated by education? If so, by what method? Will the same method of elimination be universally applied? Will honesty be acquired through training? While the writer, from experience with many of the so-called 'undesirable' types of pupils, and from the analogy of the unimprovability of intelligence, judges such efforts rather pessimistically, he hopes that his anticipation will be proved wrong.

If we gathered at the present time all the information available about pupils, our progress in the direction of better vocational counsel would be materially improved. Although such information is based on judgments and incomplete data, it would be a step in the right direction. With such records would come improvement in the measurement of traits. It is safe to predict that our efforts in the direction of analysis and record of pupils are only in an early stage and that they are certain to rise very rapidly to a higher plane.

The program which has been outlined calls for careful scientific training for those who are to carry on work of vocational guidance and educational direction. The scientific methods and testing technique of the psychologists offer a happy means of approach to such training. Measurement in achievement and in intelligence is beginning to approach a degree of perfection which may become comparable with exact measurement in any other scientific field. It is partly for this reason that the training of the vocational staff is being entrusted in part to the psychologists. The psychologist also has a contribution in the production of tests of special aptitudes, in which work he is co-operating with tradesmen who are familiar with their own fields. In such a program of training, the psychologist should not presume to claim for himself full credit for the success of vocational education. Counsellors who are close students of human nature, co-ordinators and placement officers who understand the local conditions in industry, may well claim their share in the growing success of vocational education.

Expected Results

One of the most immediate results of a comprehensive and intelligent system of vocational guidance will be a better understanding of human relationships and of human limitations. The large turnover in personnel, the traditional disagreement between labor and capital, unemployment among certain classes of society least capable of managing their own affairs with prudence, are glaring weak spots in our present social and industrial order. If the elements which cause these conditions can be analyzed and therapeutic work can be undertaken by responsible parties with scientific training, the status of labor will be materially improved. Industry will also benefit from improvement in efficiency. The present turnover of labor and the forced training of a continual stream of new workers are the despair of any employer. With improved efficiency, the attitude of industry toward the scientific method of personnel will be materially improved.

Finally, it may be expected that the individual worker will find his status much happier under the new order. His abilities and also his limitations will be known to himself and to his employer. He will have a fair opportunity to try his talents and to be satisfied that his own field has been found. All the traits in which he is known to be weak will have been diligently trained for improvement. Provoking elements in personality will be overcome or recognized for what they are. At present, they form an effective smoke barrage behind which the real worth of the worker may be concealed. A new and changed social life will follow and thus will be provided a state of mind conducive to better co-operation.

SUMMARY

Analysis of the history of industrial development, its present status, and its future possibilities may be summed up chiefly under the following points:

1. Rapid and significant changes have occurred in industry which workers have been relatively unprepared to meet easily.
2. These changes not only affected industry, but also altered the social order by breaking up personal contacts between the employer and employee. The worker was also removed from his home community to a new and strange environment.
3. It is only very recently that a scientific system of measurements has been proposed for a wiser and more fortunate selection of personnel.

4. The analysis of industrial occupations and tests for measurement of efficiency were greatly stimulated by the application of scientific personnel methods in the United States Army in the late war. These studies were reported by Chapman.

5. Out of vocational education in the public schools have come detailed occupational information by Edgerton and others. Such analyses, and the trade testing in the army, deal with information about occupations and levels of efficiency which may be required in them.

6. One task of industrial education is to disseminate to pupils accurate, detailed, and impartial occupational information, and thereby provide pupils with guide posts to their own chosen fields.

7. Tests of specific aptitudes are being developed to measure the chances of success of pupils who ultimately will engage in certain occupations. Tests of mechanical and of clerical aptitudes already standardized give promise of more to follow. A careful technique of examination is urgently needed if this new type of measurement is to have a fair degree of success.

8. All pupils should be provided with contacts with actual jobs in industry before leaving school (such as the Cincinnati plan provides) and should have opportunity to take several ''finding courses'' in the junior high school. Pupils, teachers, counsellors, parents, and all concerned will be much better satisfied if choice of occupation is made in the light of such experiences.

9. It is imperative that a system of 'follow-up' be undertaken, so as to verify the analyses and prognoses which have been made. This fundamental step involves long and patient research in all types of trades and occupations. The difficulty of the task does not deter resolution in its execution.

10. The individual pupil must be analyzed from as many points of view as there are significant factors in his make-up. Abilities of all kinds, aptitudes, personality, health, and inclinations must be measured and evaluated independently and in combination.

11. Vocational industrial education deals with the final product of education. Education as a whole will be judged largely on how well its product adjusts itself to society, rather than upon marks of

proficiency in academic or trade subjects. Therefore, such education is a very integral part of the complete education of the youth and not a separate unit designed to function by and of itself.

12. The success of industrial education depends in large part upon how thoroughly the principles of scientific education are adopted in its procedure. The auspicious beginnings speak well for the future.

CHAPTER IX

TRAINING FOREMEN AND OTHER LEADERS IN INDUSTRY

A. INTRODUCTION

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As we study the problem of living and making a living, each advance we make towards an ideal democracy seems but to open new problems and difficulties. Therefore, while our modern industrial process of securing food, shelter, and clothing has brought untold boons and blessings, it has also given birth to many ills which were unknown to our forefathers of a handcraft age.

In modern industry all scientific planning of production, all policies regarding personnel relations and working conditions must be carried to the rank and file of the workers through a subordinate. The importance of this subordinate's position has only recently been recognized. This key position of modern industry has fallen upon the shop foreman. He is the link that holds management and worker together. The foreman stands in this unique position of being the first man (of an executive nature) next to the actual job of production. In industry this minor executive is known as a supervisor, general foreman, foreman, forelady, assistant foreman, gang leader, second-hand quarterman, and leaderman. In general, his selection has not been made because of any special leadership ability. He may have received his promotion because he was "a good fellow" and would always stand by the firm. Again, his jump from the bench to the foreman's desk may have been a reward for many years of steady and faithful service.

Before the World War few foremen received any special training for their job. The majority of the men now holding this position in modern industry never graduated from an elementary school and only a few have had high-school training.

THE DIFFERENT PHASES OF THE FOREMAN'S JOB

Except in small shops and emergency cases the foreman does not take part in the actual making of the product. His work is mainly concerned with the problem of making the factors—materials, machines, and labor—work together in such harmony and efficiency that the maximal production and standard quality of the product is maintained. He may have shared in the planning of the work schedule, but his larger task lies in seeing that the program of production goes along according to the work schedule.

The accompanying chart[1] illustrates the foreman's position in modern industry and gives the details of the three phases of his job:

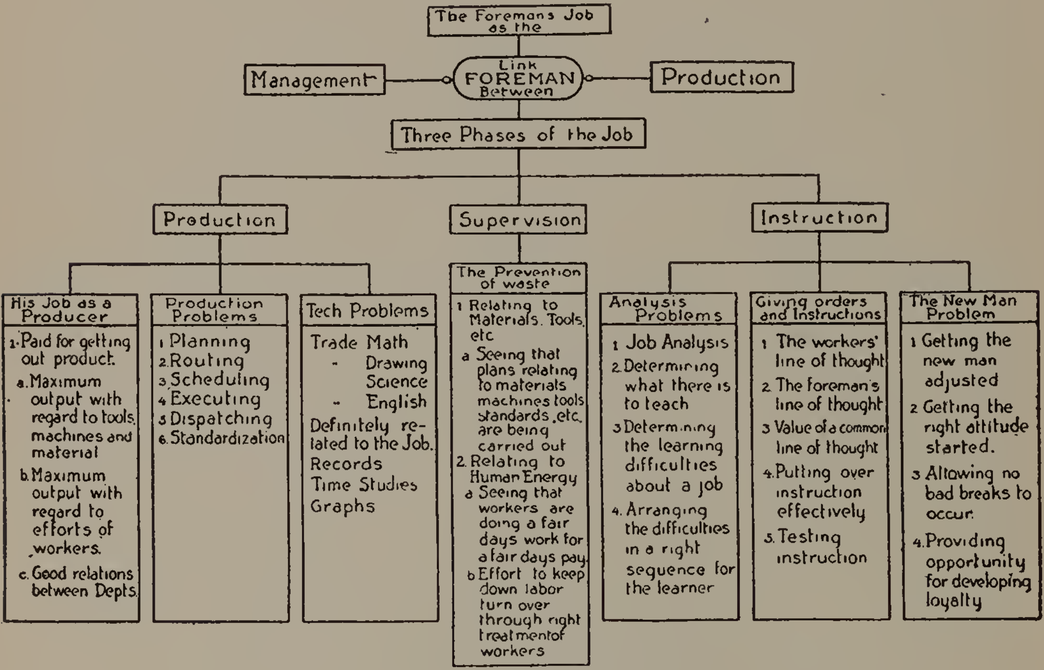
The Foremans Job as the
Link
FOREMAN
Between
Management
Production
Three Phases of the Job
Production
Supervision
Instruction
His Job as a Producer
1. Paid for getting out product.
a. Maximum output with regard to tools, machines and material
b. Maximum output with regard to efforts of workers.
c. Good relations between Depts.
Production Problems
1 Planning
2. Routing
3. Scheduling
4. Executing
5. Dispatching
6. Standardization
Tech Problems
Trade Math
- Drawing
Science
- English
Definitely related to the Job.
Records
Time Studies
Graphs
The Prevention of waste
1 Relating to Materials. Tools, etc
a Seeing that plans relating to materials machines tools standards, etc, are being carried out
2. Relating to Human Energy
a Seeing that workers are doing a fair days work for a fair days pay.
b Effort to keep down labor turn over through right treatment of workers
Analysis Problems
1 Job Analysis
2. Determining what there is to teach
3 Determining the learning difficulties about a job
4. Arranging the difficulties in a right sequence for the learner
Giving orders and Instructions
1 The workers' line of thought
2. The foreman's line of thought
3 Value of a common line of thought
4. Putting over instruction effectively
5. Testing instruction
The New Man Problem
1 Getting the new man adjusted
2 Getting the right attitude started.
3 Allowing no bad breaks to occur.
4. Providing opportunity for developing loyalty

CHART 1 THE FOREMAN'S WORK

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[1] From an article by the author on "The foreman and his job." *Industrial Arts Mag.*, December, 1922.

ORGANIZED EFFORTS IN FOREMAN TRAINING

To-day we have two distinct types of foreman training in operation. The first type deals with a course which aims to cover the general principles of foremanship. These courses cover problems in production management, economics, business administration, studies in human relations, science, industrial history, technical training, and even public speaking and salesmanship. Most of these courses have been organized by private commercial schools and are administered through lecture courses and correspondence instruction. All of these courses are more or less of an inspirational type and, on the whole, have rendered a good service. They have awakened the foreman to the fact that work is a co-operative venture. They have stirred his imagination and broadened his vision, so that he handles his problem with a larger spirit and a sounder judgment. The courses, however, have failed in many cases, because those who organized them failed to realize that the average foreman cannot take generalities and work out his own specialized application. Courses in scientific management and efficiency are good vocational training for the man who is in direct line for promotion to the manager's job. The average foreman, however, has reached his final goal when he becomes a foreman, and any training given him should be to make him a first-class foreman and not a third-rate manager. The daily round of concerns and duties of the foreman's job will provide plenty of problems to be solved, plenty of real situations calling for study and investigation, without lapping over into the field of the manager's job.

The second type of foreman training classes deals with the actual problems of the local plant. An analysis of the foreman's job in any factory will reveal enough unsatisfactory conditions and errors to make a real course of study. The analysis of common errors and of ways and means for eliminating them becomes the objective of this type of training.

Getting down to a actual analysis of the things that 'gum the works' gives many opportunities for seeing ourselves as others see us. It is also a good experience for the foreman to see not only what his brother foremen have to face in keeping the product moving according to schedule, but also to appreciate what the sales force, the engineering department, the employment department, and the accounting department of his company are doing to make the wheels of production turn.

This type of foreman training has given some splendid results, and every industrial concern that has organized training along these lines can point to economies in material, increased life of equipment, and better personnel relations.

TYPES OF METHOD

A number of methods, exhibiting varying degrees of success, have been tried in foreman training. The four principal methods now in practice are: (1) the lecture method, (2) the conference method, (3) the text study method, and (4) the field training method.

The Lecture Method

The giving of lectures is easy to operate. It is economical, as it can be used with large groups. On the other hand, it is very ineffective in stimulating real thinking. It is not well adapted to the average type of foreman. The interest is apt to be a temporary affair. The correlation between theory and practice is usually low.

The Conference Method

This is simply an organization for handling certain types of objectives with groups of foremen. Its informal nature invites expression on the part of the foreman. It gives a number of real opportunities to participate in discussion. It encourages self-analysis and develops a technique of analysis. It focuses attention upon the difficulties of the daily job. It assures a training course of great flexibility. On the other hand, the discussion may wander far from the objective and get nowhere. Personal matters of a disruptive nature are apt to creep in. The conferences may develop into purely ''experience'' or ''testimony'' meetings.

The Text Study Method

Two types of text material are used: first, there is text material which has been developed and presented by the company; second, there is text material prepared and presented by outside agencies.

Some of the common questions asked about this method are: "Does the foreman get what he needs?" "Are the benefits of book study lasting?" "Will the foreman study with enthusiasm and will he follow his study through to completion?" The answers to these questions depend upon the objective of the course, the style of the presentation, and the length of the course.

A very large proportion of foreman training carried on in the country is under this text study plan. Sometimes it is supplemented by lectures. A large number of companies testify that their men have been benefited by these studies. On the other hand, there are companies who rather frankly state that, while there may have been improvements of a temporary nature, very little permanent growth has come from the work.

The Field Training Method

Developing supervisors and minor executives on the job is possibly the oldest method of training. It involves intelligent selection of the men who are to be given special attention. Starting with the assignments of special jobs, the man is gradually given more and larger responsibilities.

Training of this kind need not be systematic, although there is no reason why it cannot be combined with any of the other types of training just mentioned or any type of industrial education.

The chief advantages of this type of training are that in the survival of the fittest some good foremen are developed, that it is extremely flexible, and that it can be operated with a few men or a large number of men. The atmosphere is distinctly that of a job; the school idea is entirely eliminated.

THE IMPORTANCE OF THE TEACHER, OR LEADER, IN FOREMAN TRAINING

It will be noticed that in almost every type of foreman training, the success or failure of the method will depend very largely upon the leader. A real leader of men will sooner or later get good results, while a poor teacher, even under the most favorable conditions and with the best method, will never get very satisfactory results. The training of leaders, or teachers, is therefore a tremendously important part of foreman training.

THE FOREMAN IN A MODERN INDUSTRIAL PLANT

Perhaps enough has been said to show how important a place the foreman occupies in our modern industrial plant. He is at present doing a great service. The good foreman is worth his weight in gold, but he is often very much underpaid, and he is often placed in that most undesirable situation of being kicked about between the unreasonable demands of a superintendent and a lazy response from a group of dissatisfied workers. He is often "between the devil and the deep sea" in his efforts to serve the two masters of capital and labor, and he is forced to isolate himself from both of these forces because he seems to serve neither. He deserves very much better and more reasonable treatment. More and more, we are going to realize the necessity of giving this man special training. His job is one of the hardest, and yet one of the most important of the minor executive positions, and we shall not have the ideal man for this job unless we have trained him.

Merely convincing the superintendent or general manager that foremanship training is needed is no guaranty that constructive results will be secured, if the foreman has not also been converted to the plan. Any successful plan needs the continual help and nursing of some man whose special job it is to see that the task is done right. Therefore, any plan of foremanship training should after all be a continuous process, rather than spasmodic, emotional proddings, and should gradually develop into a system of regular conferences with the executives. The logical man to do this work would be a person connected with the regular training department of a company, if he has the necessary point of view, qualifications, and the respect of the men. If this plan cannot be carried out, it would be well for a plant to make connections with a recognized expert connected with the Federal Board for Vocational Education or with the vocational education department of the state university and get the work started by their aid.

The reports that comprise the remainder of this chapter are submitted by men who have had actual supervision of foremanship training work carried on in co-operation with the extension department of their respective training institutions. These reports show what has been accomplished in this field of extension training and are representative of work that is being done in many other universities in this country.

B. FOREMAN TRAINING AS CARRIED ON BY THE VOCATIONAL EDUCATION DEPARTMENT OF OHIO STATE UNIVERSITY

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Two distinct phases of the foreman training problem have been given attention by this department during the past four years: (1) training foremen to be competent instructors of men under their supervision or direction, and (2) training industrial executives to an intelligent appreciation of the foreman training problem, and, where possible, to be able to organize and conduct foremanship classes among their own foremen.

Training Instructor Foremen

Objectives

In the work of training instructor foremen, the object is to build up teaching ability in foremen.

Methods Employed

Our experience thus far has convinced us that different methods must be employed in different plants, the nature of the industry probably being the chief determining factor. The type of foreman found is also an important factor. In some cases real success has come through the conference or round-table method when dealing with twenty or more foremen at a time; while in other cases our best results came after we cut the groups down to a half-dozen in number and took up special teaching problems for short intensive consideration. In general, it may be said that when dealing with managerial problems, the larger group is most satisfactory, but when considering specific instructional phases of the foreman's job, the smaller and more closely classified group brings better results.

Regardless of the numbers in the groups, all conference and class work is conducted in the plants, and usually in part, or entirely on company time. We have found that better results come

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The major part of this work was carried on while the writer was connected with the University of Cincinnati.

from an extended, rather than a brief period of training, *e. g.*, a year, rather than three or four months.

Sample of Results Obtained

In one large plant, where, under the topic of leadership, numerous thought provoking questions were used by the leader, the men in the group contributed as follows:[2]

1. Traits characteristic of the good leader
    a. Confidence in his men
    b. Is co-operative
    c. Has respect for others
    d. Has initiative
    e. Is fair
    f. Knows his work
    g. Has ability to see three sides of the question
    h. Is honest
    i. Says ''come on,'' not ''go on''
    j. Can discipline well
    k. Has ambition to be better
    l. Has ability to train his men
2. How poor leadership affects production costs
    a. Causes disorganization which results in
        1. increased number of accidents
        2. increased turnover
        3. actual decrease in out-put
        4. greater waste
        5. increased absence
        6. poor workmanship
        7. general indifference which in turn causes
            (a) misunderstanding
            (b) dissatisfaction
            (c) lack of 'pep'
            (d) carelessness
            (e) loss of orders

Outstanding Difficulties

1. For the leaders in such work to win and hold the respect and confidence of the foremen, who are generally suspicious at the start.

2. To teach foremen to analyze their personnel and teaching problems.

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[2] This work was under the immediate direction of R. W. Jenkins of Hamilton, Ohio.

3. To get whole-hearted co-operation from the management.

4. For the leader to get close enough to the plant's problems to make possible an indirect, if not direct, discussion of them at the conferences of foremen.

TRAINING LEADERS FOR FOREMANSHIP CONFERENCES OR CLASSES

Objectives

The purpose of this work, as stated in part above, is to train executive leaders—men who rank higher than foremen—to an appreciation of the meaning of, and need for, foreman training, and to equip them, as far as possible, to conduct training classes for their own foremen.

Methods Employed

1. The personnel of the group consists at first of executives who rank higher than foremen in their respective plants; later, foremen themselves are asked for.

2. By means of charts, analyses, diagrams, etc., the executives are led to see not only what is demanded of the average foreman, but also what he must be in order that he may measure up to the demands. A chart of possible foreman attributes is used in this connection.

3. The kind of help foremen need is emphasized by means of dozens of everyday problems which have been handed in by foremen from other plants.

4. The practical problems referred to in "3," and others added by members of the group, are organized for class or conference use.

5. The leader organizes units of material and demonstrates in a series of sessions, with the help of foremen who have come in, how foreman training may be carried on by plant executives.

6. One or more of the executive group volunteers to take charge of the foreman group for a period. The leader helps him get ready for this work.

7. Following each demonstration lesson or conference, the meeting is thrown open for general discussion as to why certain things were done or left undone.

8. Follow-up is carried on in plants where progressive members of the group have started foreman training work.

Sample of Material Used

General Topic: Managing Men
Specific Topic: Analyzing Problems

As in medicine and law, so in all lines of activity, the degree of success an executive attains varies directly as his ability to analyze his problems or difficulties and find correct methods of solving them. Genuine success is never attained by any other method, though occasionally one sees evidence of apparent success that has resulted from mere accident. These cases, however, are the exception, not the rule, and should not be heeded by those who are in search of the laws of success.

It follows from the above statement that since two definite demands are placed upon each executive, at least two possibilities of failure obtain. He may fail because he analyzes poorly, or he may fail because he cannot find the correct method of solution. In terms of the medical man, he can fail in either his diagnosis or his prescription. It has been my observation that poor executive ability is more often due to indisposition or inability to go to the bottom of the difficulty than to inability to find a satisfactory solution for the difficulty when it has been located.

The specific object of this unit is to set forth a technique of procedure when plant problems appear. It will suffice, therefore, to indicate the simple outline employed and one or two typical analyses.

It is recommended that the leader shall not depend entirely upon the contributions of the foreman. On the contrary, he should always 'have something up his sleeve' in the event that things do not happen speedily enough. But he should also not be too hasty about suggesting, so long as extracting ideas from them is not too laborious. It must always be borne in mind by leaders that in proportion as the members of the group contribute, in like proportion is self-improvement taking place.

COMMON DEFECTS OF WORKERS

Defects	Possible Causes	Suggested Remedies
Wasting time in getting to work	Slow type of foreman, the kind who always travels with an alibi	Either improve present foreman or get a new one. Business cannot afford to have bad examples before the rank and file
	The worker dislikes his job	Either broaden worker's conception of the job's significance, or transfer him to another.
	Worker is too lazy, or possibly is just slow and easy going	Put more immediate and more constant pull into the wage system. Institute an unvarying policy of stimulating worker to overcome objectionable habits
	A flat wage system	Devise wage system which dovetails more closely with human nature
	Worker feels that fellow-workman is better paid and better treated than he is	Base wage system upon complete job analysis showing respective amounts of skill, knowledge, responsibility, etc., each job requires
	Worker fears that he will run out of work	Remove the curse of seasonal employment, undoubtedly one of the greatest hindrances to industrial competency
	Worker 'has it in for his foreman'	Have foreman correct conditions if possible, otherwise transfer worker
	Worker fails to plan ahead, to leave things so that no time need be lost in getting started next time	Foreman should train men so that this practice cannot be indulged in consistently. Better foremanship is the prime need in this case
Carelessness on the job	Worker not at the job for which he is best adapted	Make job analysis; also man or worker analysis and shift worker to job for which he is suited, or create different job for him where he is
	Worker does not understand instructions given by foreman	Train foreman so that he knows how and when to give instructions; also so that he sees to it that the worker understands
	Disregard of instructions by workman	Discipline in accordance with the offense committed
	Natural fatigue on worker's part	Lighten requirements of job, if analysis reveals that they are too great. Seek to promote more regular habits in workman. Shift worker to another job. Let worker lay off for awhile

Defects	Possible Causes	Suggested Remedies
	Worker lacks confidence in himself	Foreman should offer distinct encouragement. Lead worker to believe that he can do the work satisfactorily
	Worker is too familiar with the job; it has lost its novelty	Shift to another type of job if worker has 'gone stale.' There is no good reason why worker should not 'go stale'
	Worker is too anxious to increase the size of his weekly wage	Let foreman tactfully point out cost of such carelessness to company and add that no doubt it was quite unintentional; if not this, then penalize worker by cutting wage for error committed. Possibly a severe reprimand will suffice
	Worker is ignorant regarding the necessity for great care	Foreman should point out to him why care is imperative in connection with the work
	Worker is naturally reckless, takes pride in doing daring things though he does not desire to injure himself or others	Provide course of instruction. If this proves useless, discipline of one or another sort will have to be resorted to. As a last resort 'fire' him

Other common defects in workers which may be similarly analyzed are:

Chronic cases of tardiness and absenteeism
Promiscuous visiting
Loafing on the job
Using objectionable language
Stirring up trouble
Dodging unpleasant jobs
General untidiness about shop or office
Wastefulness
Quarrelsomeness
Lack of co-operation

Outstanding Difficulties Met

1. In the main, industrial executives are looking for a cure-all, a prescription, if you please, that they can have filled and from which immediate results will come. When the statement is made that they must not only prepare to do this foreman training job, but they must also select, organize, and 'put over' the subject matter, half or more of them get 'cold feet' on the spot.

2. Managements are not, as a rule, sufficiently 'sold' on the proposal, as a result of which very frequently a 'sold' executive has his hands tied when he tries to put his ideas into practice. Un-

doubtedly, the managers are the chief obstacle in the way of foreman training to-day.

3. Relatively few industrial executives have the attitude which is indispensable to successful leadership of foreman classes. The prevailing tendency among them is to give orders to their foremen, rather than to discuss matters with them.

C. FOREMAN TRAINING AS CARRIED ON BY THE VOCATIONAL EDUCATION DEPARTMENT OF INDIANA UNIVERSITY

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Indiana University made the first start in the United States, so far as the writer knows, in the organization of Factory Instructor Conferences as a part of a publicly directed activity under the Smith-Hughes Law. The work was started incidentally in connection with the vocational teacher training classes conducted by the University in the fall of 1918. It was continued experimentally by meeting groups of foremen in the individual factories themselves, beginning in February, 1919. At that time a tentative approval was received from both State and Federal Vocational Education Departments, and since that time the official endorsement and cordial support of City, State, and Federal Boards have been given to this work. Local directors of vocational education have assisted in interesting factory managers in their communities in such activities.

The university has also appreciated the hearty co-operation received from these factory managers in carrying out the conferences with their foremen. The men have realized that the public interest, as represented by the state university, and the factory interest, as represented by the management, are both concerned with the promotion of better training of workers. So they have been glad to arrange for the proposed series of meetings convenient for the university representative and for the entire group of foremen and other department heads.

PRESENT STATUS OF FACTORY TRAINING

Visits to plants, talks with factory managers, and discussions with foremen and department heads have shown the following status in the development of a training program for industrial workers in Indiana.

Some plants still make an effort to hire men ready-trained for production, but it is becoming more and more evident to them that this practice must soon be almost entirely abandoned (except in certain industries grouped in a single community). One of the reasons for this is the lack of thorough mechanics with well-founded training and experience; another is the high degree of specialization which is continually developing in factories, making necessary an intensive preparation for such employment; a third reason is the unique character of work required in each factory, making it difficult to adapt a worker immediately from one plant to conditions in another plant, even where the same type of production is handled. Even the hiring from one plant to another does not produce new skilled individuals. It merely shifts the burden of providing the training.

In most of the plants where university contacts have been established, the foreman is largely responsible for the training of employees. These plants vary in size from a few hundred to several thousand workers. The foreman's duties in many of the places are not clearly defined, although in most cases it is assumed that he is in special charge of the workers in his department. Thus, the line of least resistance, as well as shop tradition, suggests to the management that the introduction of the worker to his job shall be in the hands of the foreman. He is made responsible for trying out the prospect, either watching him from time to time as he adjusts himself to the needs of the work, or giving him more or less assistance in this adjusting process. In a few cases, the foreman has realized the importance of the teaching part of his job and has made himself into a really effective shop teacher, capable of understanding the men and knowing how to 'put over' such instruction as is necessary to make an intelligent, skilled, interested, alert, and perhaps, ambitious worker.

In some factories a superintendent or manager or educational director has taken the responsibility for conducting frequent foremen conferences, where teaching problems are discussed and successful and unsuccessful teaching experiences exchanged. This practice of holding weekly, bi-weekly, or monthly conferences is becoming more common in Indiana factories, and where such conferences are held, the training program usually gets its proper consideration.

Co-operation with Public Institutions

Many Indiana factories are co-operating with the local schools in the promotion of a public vocational education program.

Reports have indicated also that a real service has been rendered to industry and to the betterment of workers in industry through the conduct of foremanship conferences by the State University as just described. Foremen have realized the need for a more sympathetic and definite study of human nature and of the principles of teaching built upon this study. They have come to realize that there are tricks of teaching as well as tricks of various trades, and that more satisfactory training is possible where such teaching devices are used. More definite listing of the details of shop jobs has been practiced, and the teaching of these details has been presented more intelligently, and followed up more patiently than before. Foremen have succeeded in developing an interest in the job, as well as an ability to do the job, and through this, have apparently cut down somewhat the labor turnover in their plants. Statements have been made that there is better feeling between the men and the foreman and the management, and more desire to co-operate in promoting their mutual welfare. The foremen, themselves, have taken the teaching part of their work more seriously, and have made a more definite study of their own instruction problems. Through all of this, the main object of the university's efforts is being realized—workers better prepared for employment through better teaching.

All of this field service with industrial plants has recently been transferred from Indiana University to Purdue University, the state's engineering and agricultural college, following a recommendation in the Indiana State Survey that the training of industrial teachers be concentrated in one institution. It was felt that such service fits best into a complete and consistent program connected with the engineering and educational activities carried on by Purdue University. This state-wide Factory Instructor Conference program for Indiana is now being developed by Purdue. Plans are under way for an enlarged service to the industries and industrial workers of the state in the building up of a fuller industrial training program, providing a training for present-day factory occupations. The public schools may furnish a foundation training for certain recognized trades and in some locations they may give a specialized training for a few of these factory occupations. At present, they are reaching but a small percentage of those actually entering the factories, so a large responsibility rests upon the factory itself for training its own employees. The state university can help promote better factory training.

D. FOREMAN TRAINING AS CARRIED ON BY THE VOCATIONAL EDUCATION DEPARTMENT OF THE UNIVERSITY OF MICHIGAN

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The educational work being carried on among foremen in Michigan was started during the period in which manufacturers were searching frantically for any scheme which would insure them a reasonably contented working force. Numerous devices to secure the full co-operation of their workers, such as shorter hours, higher wages, and better working conditions, had been tried without much success.

This feeling of uncertainty was so general among manufacturers that at the close of an address on ''Vocational Education,'' given by Professor G. E. Myers, of the University of Michigan, before the Rotary Club of Grand Rapids, some of these men approached him to see if he could offer any suggestions which might lead to the creation of a better attitude on the part of their men toward their job and toward their employers. Following the suggestions of this meeting, Dr. Myers organized a class composed of superintendents and managers from eight different factories. The class met six times, and as a result of their discussions, it was found that the foremen needed instruction in a number of other questions besides those affecting the relations between employers and employees. Our experience has taught us that these questions may be classified under two general heads; first, those which are general, and which may be discussed by an itinerant teacher who need not necessarily be thoroughly familiar with each foreman's job; and second, those which are concerned with problems of specific interest to one foreman, one group, or one trade, and which should be discussed by a teacher who is constantly in touch with the specific problems of the group he is dealing with.

The nature of the organization of a state university made it impracticable for the University of Michigan to station a representative in each community where work might be done for the purpose of studying and dealing with the specific problems of each locality. Consequently, an itinerant teacher was assigned the task of leading the conferences on the questions included in the first group mentioned above, in various cities of the State. This work was carried on for two years, 1919-1921, and its value was so impressed on the manufacturers that many of them are continuing the work in their own factories. In addition to this, a group of manufacturers in Grand Rapids presented a rather imperative request to the board of education of that city for a permanent full-time instructor who could continue the work and extend it into the second field, which entailed a more detailed study of the specific problems of their factories. In response to this request the board of education secured Mr. Arthur F. Dodge, from the United States Rubber Company, to carry on this work. Mr. Dodge had been principal of a high school and had done training work for the United States Shipping Board before he took charge of the training of foremen for the rubber company.

In order to convey some idea of the material being used in Michigan, outlines of the courses of training for foremen are submitted. Many of the topics in Course I will be found also in Course III. In Course I the members of the class may come from a number of factories, while in Course III they come from one factory and have a common interest.

With reference to Course II, specialization of modern industry has resulted in foremen, as well as workmen, in large plants being closely confined to their own departments, with the outcome that men in one department are often ignorant of operations and methods in other departments. The objective of this course is to make the foremen familiar with the most important operations and methods throughout his own plant, so that he understands his own job in its proper relation to the factory as a whole.

Course I. Topics which apply in any foreman's job and which are treated generally

(Topics for study and discussion)

1. The organization chart
2. Analysis of foreman's job
3. The selection and training of foremen
4. Hiring and firing
5. Handling men

6. Training men
7. Systems of payment
8. Production
9. Industrial democracy
10. Correcting wrong thinking
11. The company's policies
12. Planning work
13. Securing and using suggestions
14. Scientific management

Course II. Topics which apply specifically to a selected group

For Furniture Workers
(Topics for study and discussion)

1. Properties of wood
2. Kiln drying
3. Cutting and machine room
4. Glue and veneering
5. Cabinet room
6. Finishing room and finishing materials
7. Rod room
8. Engineering department
9. Industrial relations department
10. Planning department
11. Accounting and cost department
12. Purchasing department
13. Selling

For Metal Workers
(Topics for study and discussion)

1. Iron and steel
2. Alloys of copper
3. Foundry
4. Machine shop
5. Pressing and stamping
6. Tool making
7. Polishing, buffing, and plating
8. Assembling
9. Industrial relations department
10. Engineering department
11. Planning department
12. Purchasing department
13. Accounting and cost
14. Selling

(It will be noted that the six topics at the end of each group are the same in each case. In every case these are dealt with from the point of view of the factory from which the foremen have come.)

Course III. Topics which are general, but which are considered from the standpoint of the factories represented in the classes

(Topics for study and discussion)

1. Analysis of foreman's job
2. Organization chart of department and delegation of duties and responsibilities
3. Storage and care of raw materials
4. Keeping the right amount of stock on hand
5. Scrap and spoiled work
6. Lay-out of equipment
7. Lay-out of equipment (continued)
8. Methods of moving goods
9. Scheduling
10. Production records
11. Wage systems
12. Main elements in cost of labor turnover
13. Value of turnover records
14. Causes of turnover
15. Welfare versus sound industrial relations' policies
16. Fitting workers to jobs
17. Training the worker
18. Non-financial incentives
19. Employee representation

Conclusions Regarding the Michigan Experiment

1. There are two types of work which may be carried on among foremen; (a) that which is general in character, and (b) that which is of specific interest to certain groups.

2. An instructor or leader who cannot remain in one place long enough to make a study of local conditions and problems cannot hope to do more than introduce the work. His field lies in the type of work mentioned in 1 (a) above.

3. It is just as much a duty of a local board of education to provide classes for foremen as it is to provide them for machinists, printers, or draftsmen. While the state or university may aid in the development of the work, the responsibility of providing adequate training is essentially a local one.

4. The state department of public instruction or the state university may provide valuable service by carrying on classes for

leaders—these leaders to carry the work over to the foremen in their community.

5. The greatest care must be exercised in selecting leaders. The wrong type of person may wreck the enthusiasm of a whole community for the work in one meeting.

6. The number of men in our classes has varied from twelve to forty, but it has been found that the best work can be done when the number in the group does not exceed twenty.

7. Excellent work has been done in classes held on the employer's time, but it is felt that many foremen do not benefit as much from such classes as they do when their minds are free from the responsibilities of their shop. Because of this, as well as for other reasons, it is our opinion that classes are more successful when held outside of working hours.

8. It is unwise for the employer to require foremen to attend the meetings. Attendance should be voluntary. If the leader is of the right type, the men will continue to attend; if he is not, the reaction of the foremen will not leave him long in doubt about his lack of success.

9. The problem of recruiting classes is one which may be handled in different ways depending on the community. In Michigan the conclusion has been reached that, if the work is to be fully effective, the active co-operation of the employers is necessary. This must be obtained by convincing the employer that your philosophy is sound and that you have something to offer which is of real value.

After the co-operation of the employer has been obtained, it is a simple matter for him to secure an invitation from his foremen for you to present your proposals to them. While you are doing this, make it perfectly clear that the work is independent of the manufacturers' association, that attendance is entirely voluntary, and that you come as a conference leader, rather than as a teacher. Throughout your selling campaign, it is wiser to understate, rather than overstate what you hope to accomplish.

E. SOME CONCLUSIONS REGARDING METHODS OF FOREMAN TRAINING

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As may be noted from the several reports, our experience in the training of foremen up to the present time has pretty clearly indicated that there is no one way of getting at the job. We have, on the one hand, the conference method, involving no set program, but developing a program which very closely fits into the interest and special requirements of a given group of employed foremen. We have, on the other hand, the more general specific programs based upon a study of weak points in the foremanship work. We have, further, the organized training courses involving definite text material, such as has been put out by the Y. M. C. A., The Business Training Corporation, and the American School.

In view of this, it has seemed worth while to endeavor to summarize the various plans for improving foremanship.

Trade Extension Foremanship

By trade extension foremanship is meant training to increase the ability of men already employed as foremen. In general, this has been attempted in two ways: first, by the use of organized training courses, such as those conducted by a number of private institutions; second, by the conference method with a more or less elastic program. That both methods possess advantages is indicated by the fact that advocates of both can point to successful work. That each device possesses disadvantages is also indicated by the fact that unsuccessful results have been secured in some cases.

The acid test as to the value of any plan for improving foremanship lies in the degree to which better foremanship is secured in ways which can be traced to the training work. Whatever the special form, practically all plans can be referred to one of two types: organized courses or conferences. Organized training courses have usually been based upon some sort of an analysis of the foreman's job from which there has been developed some sort of a topical outline. This analysis has usually been made by persons holding positions above foremen's jobs.

On the basis of this outline there has been prepared a text or a set of 'notes,' usually accompanied by some form of problems, questions, or other devices intended to promote the ability to apply the more or less general principles set forth in the text to the specific problems of each foreman under his own special conditions. When such work is properly carried on, it is often accompanied by considerable group discussion directed by a qualified instructor.

The objections to the general organized foremanship course, to which attention has been shown, commonly include the following:

1. A standardized course does not fit closely into the special conditions of organization, policy, etc., in any given plant or given occupation.
2. Many subjects are included in most standardized courses which really deal with the duties and responsibilities of high officials.
3. Many foreman have lost the habit of book study, and after a day's work are disinclined to attack 'home work.'
4. The majority of these courses deal largely with the technical and production side of industrial work. A competent foreman is already familiar with this side of his duties, whereas he is less equipped to deal efficiently with his job responsibilities on the human factor side.

It is fair to assume that success or failure in the use of standardized courses, as in any other piece of work where human elements are involved, depends upon the special type of foremen, the special type of organization under which they work, the ability and qualifications of the instructor, and the basis on which men are promoted to foremanship under the policies of the employing concern.

The *conference* method is the second general device for trade extension foremanship. It has been frequently described by different contributors and in other publications, and hence no long description is necessary here. So far as the writer knows, it originated in studies and recommendations made by a group of foremen in the Harrison plant at Philadelphia.

The results of this study appeared in Bulletin 52 of the Federal Board, Parts 1 and 2, about four years ago. This Board has continued its study of the conference device, since no other agency seemed to be in a position to carry on this piece of research work, while the development and presentation of organized courses was in capable hands.

The conference plan has been presented to many representatives of industry and to many state officers since it was first worked out. In addition, a number of such men have been given training in carrying on conference work, notably at the Oswego Normal School under the New York State Department of Vocational Education, and through a number of conferences held by the Federal Board in different parts of the country.

As a result a considerable number of men have conducted conferences in a wide variety of industries. As would be expected, they have met with varying degrees of success, but on the whole, a sufficient amount of success has been reported fully to warrant consideration of the conference as a feasible scheme.

The net results of these experiments have clearly shown that conference methods will succeed only where there is opportunity for free discussion and where the relations between the general management and the foremen are good. It should not be attempted under any other conditions. Where it has been attempted under such undesirable conditions, but little good has been accomplished, nor could other results be expected. It is perhaps a question if under such conditions any more good would have been accomplished through a standardized training course.

The conference method, as originally proposed, was intended to deal entirely with groups of foremen without any representatives of the management taking part in the meetings. Subsequent experiments have modified this idea. A number of conferences have since been tried where the management 'sat in' with the foremen. Where confidence and good relations existed, this has apparently worked well.

Another modification of the original idea has been a series of parallel conferences with foremen on the one hand and the management on the other. At the management conference the same points were taken up which had been taken up with the foremen, but were discussed from the angle of the management. In such management conferences, however, no statement has been made as to what was said in discussion in the foremen's conferences.

On the basis of conference work carried on in approximately fifty plants by nearly as many different men, results have been satisfactory in roughly 90 percent of the cases. The other 10 percent, where results were unsatisfactory, were apparently held under adverse conditions which, had they been known in advance, would have indicated that conference methods should not have been attempted.

As this work has developed, it has been found that it is quite desirable that a conference leader should have some notion of what is likely to come up in discussion, and hence that it is worth while to combine in some part of a classified inventory the various responsibilities of foremen.

Material of this kind was prepared and published in Part 2 of Bulletin 52 of the Federal Board, with the specific statement that it was merely suggestive of the sort of material that might come out in discussion, and to that extent would be of service to a conference leader. Others have, since then, still further compiled, classified, and published similar material for the same purpose, *i.e.*, that of assisting the conference leader in knowing what to expect as discussion develops. Many men who have successfully conducted conferences have testified that such compilations have been of considerable value to them in carrying on the work.

PROMOTIONAL FOREMANSHIP TRAINING

As the term is used here, promotional foremanship training means training designed to equip a foreman for a higher job in the organization. This is an entirely legitimate and desirable form of training. It differs, however, in a marked way from the trade extension foremanship previously discussed.

In the first place, whereas the trade extension foremanship training can be based almost entirely on the experience of men already experienced in foremanship, this type of training must deal very largely with experiences which the members of the group have not experienced as responsible officers. They have, in most cases, had experience in working under such officers.

To use an analogy, in the first place we have a horizontal view, and in the second place, a view looking up from below. This means, of course, that much of what is given must be handled as material new to the men or at least as material and experiences viewed from a slant lying outside of personal experience on the job. This greatly increases the necessity for the use of instructional methods and devices. It correspondingly reduces the opportunity for the use of conference methods.

It is also evident that much of the content of training courses of this character must lie outside of the direct responsibilities and problems of foremen taking the course. Since the conference method is of value in proportion as the men have experiences and direct responsibilities on which to confer, the opportunities for the use of the conference method are greatly reduced and the necessity for using devices and instructional methods is greatly increased.

So far as the writer is aware, considering the field as a whole, but little attempt has been made to differentiate between promotional training and job extension training, except where the conference method has been used. As already pointed out, at least up to the present time, conference methods have been used almost exclusively on the trade extension basis.

Obviously, where equipment for promotion is the objective, such work should be undertaken only with men who have an opportunity to be promoted. This means a selected group.

A promotional course given to everyone who wanted to take it is of doubtful value. In the first place, the group will include many men who are not qualified by personality or mentality to be in line for promotion. In the second place, where men of this type have taken such a course, it is liable to promote dissatisfaction when, having done the work, they are not given consideration as promotional opportunities occur. In the third place, difficulties with regard to the study of text, the education required, and the use of home study, already referred to, apply even more strongly here than in the case of 'straight' foreman extension training.

Some few experiments have been carried on along these lines, one of which fell under the direct observation of the writer. In this case men who were known to be in line for promotion were brought together, thus forming a selected group. This group was given a training course of a promotional character.

This experiment was too limited to warrant the drawing of any general conclusions. So far as it went, however, it indicated that the experience of men in working under supervisors gave them a considerable apperceptive base for the work of a directly instructional character.

The chief use that could be made of the experiences obtained seemed to be in bringing out the difference between the 'slant' of the superior and that of the subordinate in considering the same problem. It also brought out the fact that such a training course should be based on an analysis of the duties of the superior, rather than that of the men in training.

As pointed out above, such an analysis is of value to the instructor in charge of the work, rather than to the men in the training group. However, in this case, partial analyses of the responsibilities of superiors were successfully worked out with the group and seemed to be of service.

TRAINING FOR FOREMANSHIP

A third phase of this work, to which but little attention has been given, has been the training of workers for the lower foremanship jobs, or the training of perfectly green men and women for these same jobs.

During the war a considerable amount of training of this character was carried on. Since that time but little work has apparently been undertaken, for the obvious reason that in the ordinary routine of promotion, the desirability of such training has been questioned until an individual was actually employed in a subordinate supervisory capacity.

It appears, then, that the development of foremanship training has shown clearly the possibility of at least three kinds of training: first, job extension training; second, promotional training for those already employed, in a supervisory capacity; third, the training of workers for subordinate supervisory jobs. Of these, the first has been the field in which most of the experimental work has been done, and the first and second have been considerably mixed in many types of training work.

General Training Work

In addition to mixing training courses or conferences there have been carried on quite a number of experiments of a more general character. These have usually consisted of a series of lectures or talks, either of a continuous or discontinuous character.

According to those who have been developing this type of somewhat general training, results have been satisfactory where the objective has been to promote good morale and *esprit de corps.* They have also found it valuable in acquainting foremen in charge of one department with the interrelations among departments.

General Summary

The study of what may be called the intrinsic efficiency of the various training plans and a determination under which each plan is qualified to function most effectively is urgently needed at this time. It would afford an excellent opportunity for a piece of research work by someone interested and qualified to undertake it. A considerable discussion of the different types of foreman training is given in Bulletin 62 of the Federal Board for Vocational Education, and might well be read as supplementary to this chapter.

We may fairly say that experience up to date has indicated that every device that has been developed has been of value in certain conditions, and that none of them has functioned in a satisfactory manner where the conditions were not right.

There is still a certain amount of confusion between two distinct kinds of foremanship training: the improvement of foremen on the job as against training for promotion. And we even have a third possibility of training for foremanship persons not employed as foremen. The whole character of the training is fundamentally affected by this question. Most of the work with which we have been connected has aimed at improvement on the job, rather than training for a higher job. Many of the textbook courses which have been developed have aimed at training for promotion. Both of these are entirely legitimate and proper, but it is a mistake in our opinion to offer promotional training where the objective is to secure greater efficiency on the job, just as it would be a mistake to offer training for greater efficiency on the job when the objective was to train for a higher job.

All these matters at present are in a condition of flux. The important point is that we are not recognizing as one important part of our vocational training program the training of the minor executive. Out of all the experimentation will come the promotion of better foremanship which is a very necessary and vital part of our industrial training program.

CHAPTER X

TRAINING OF TEACHERS FOR VOCATIONAL INDUSTRIAL SCHOOLS: SOME FUTURE PROSPECTS

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The Situation

There is as yet no *system* of vocational industrial schools in the United States. Here and there are found experimental all-day schools, touching, as it were, the fringes of this great field of work. A bare half-dozen of these are dealing with trades entered by girls and women. A score or more are giving partial vocational training to prospective machinists, carpenters, electricians, printers, automobile repair men, sheet metal workers, and the like. So far as the present writer is aware, no one of these incipient trade schools has yet reached the point where its training can be substituted in lieu of a complete apprenticeship training, if that has been standardized for the vocation. The best that has been accomplished is to have a year or two years on apprenticeship allowed for two or more years of training in the industrial school.

In those industrial vocations in which organized apprenticeship has not existed, the situation is even less clear. Pupils can leave machine-shop schools at almost any time and find profitable employment as machine-shop operative specialists. Girls, more or less completely trained in power operating, novelty work in pasting trades, or even dressmaking, can readily find employment, not because the employer recognizes them as fully trained hands, but because he is constantly taking on novices, and these, owing to their partial training, are somewhat more promising than would be novices with no training at all.

In the evening schools and schools of extension industrial education, traditions of aim and method are somewhat better established, but here, as is well known to all educators, so large a proportion of the teachers must themselves be on a part-time basis that problems of teacher-training assume a wholly different character from those encountered in providing full-time, day-school teachers.

Any survey of future prospects of teacher training for industrial school work must emphasize the enormous and baffling complexities of the field under consideration. We have only touched the fringes of the vast possible areas of vocational training for the industrial vocations. It must be remembered that these include not merely the building trades, printing, and a few other handicraft trades, to which we have become somewhat accustomed, but also the enormous range of factory operations, a wide variety of transportation vocations, many kinds of mining vocations, seamanship, and a host of others. For most of these we have now not only no experimental vocational schools, but to a large extent, educators are not even yet dreaming of seeing such schools provided, to say nothing of helping towards their provision. Educators have come to look with complete complacency upon the expenditure of many millions of dollars for the training of clerical and stenographic workers, for education in home economics, and for instruction in agriculture. They have rarely, as yet, faced either the problems of need, or the problems of procedure, in substituting school vocational education for the industries for the pick-up and largely chaotic method that now prevails.

Hence it is necessary to recognize at the outset of any discussion of the problem of training vocational school teachers that, though there are many hundreds of distinct industrial vocations, basic (or all-day) vocational schools have been proposed for hardly a score of them, and extension schools for less than one hundred.

PRESENT BEGINNINGS OF TEACHER TRAINING

The situation to date in the field of teacher training for the industrial vocations is one of beginnings, expediencies, and improvisations. Where any school of basic vocational education (that is, presupposing no previous acquisition of skills) intends to do an honest and straightforward job for a trade or other pursuit, it invariably finds it necessary to take most of its teachers from the ranks of skilled workers in that field. Evening industrial schools, since they must necessarily confine themselves so largely to the giving of technical instruction, have found it practicable largely to rely upon those trained in academic branches, even when without specific vocational qualifications for the occupation in which extension instruction is being given. Not a few full-time day schools have contented themselves with processes of technical instruction fortified by moderate amounts of laboratory or other exercise work. These have drawn to some extent upon teachers of manual training, and to a large extent upon fairly competent teachers of such technical branches as 'shop drawing,' shop mathematics, electricity, and mechanics.

The graduates of certain institutions devoted to preparing manual training or industrial arts teachers have found it practicable to become, with some additional preparation, successful industrial school teachers in carpentry, machine shop practice, printing, and probably a few other handicraft trade lines.

It is now clear that some vocations can be best taught by giving to one teacher entire responsibility for all phases of training; whilst others can only practicably be taught by subdivision of labor amongst teachers. It is not conceivable that the vocations of medicine, elementary-school teaching, or electrical engineering could be taught all by one person, however highly proficient in the practice of the vocation itself he might be. On the other hand, there now seems little justification for believing that various forms of highly specialized industrial education, comptometer operation, or salesmanship need have their teaching distributed among two or more teachers.

With regard to many other vocations the matter is still in doubt. Shall the training of the prospective home-maker be divided between at least two teachers, one responsible for cooking and its allied lines, and another responsible for sewing and its allied lines? Or is it best that one teacher should be trained to take all phases of an ordinary home-making program and teach it?

The same problem applies in agricultural education. Is it best that one teacher should teach to a group of boys in a basic home project school all that they need to have of specific practical training as well as related technical and social knowledge?

The present writer is convinced that all present tendencies in agricultural and home-making education point towards the placing in the hands of one person all forms of vocational training of novices over a stated period. This is made necessary to a large extent for the farm callings by the necessary dispersion and small size of schools for the training of prospective farmers. It would appear also to be a necessity in all rural and village schools expecting to offer vocational home-making.

In city schools it is hard as yet to determine what we shall eventually prefer, since to such a large extent the home economics courses in these schools still devote themselves almost wholly to instruction in technical knowledge, greatly subordinating the attainment of practical skills and actual practice in home-making.

Problems for the Near Future

It is now clear that any programs for the training of teachers for industrial schools must themselves conform to the standards of sound vocational education. They must proceed from foundations of job analysis, through determination of the potential abilities of those available for training to specific programs for the acquisition of practical skills, or related technical knowledge, and of related 'social' or 'general' knowledge.

Theoretically, it might seem that a well-planned program for the training of teachers for one vocation should indicate appropriate programs for the training of teachers for their vocations. It is doubtful at present how far this may be the case, because of wide disparities among different vocations, not only as between industrial and other fields, but within the industrial vocations themselves.

We are only in the beginning stages of job analysis as applied to the handicraft trades. We possess hardly any tested technique as yet for job analysis of factory operative specialties, of most repair trades, of the transport vocations, or of mining.

But methods and standards for job analyses are rapidly being improved. Applications of these in the study of any particular vocation may be expected to reveal first of all the qualitative strands, or units, entering into the composition of the total efficiency found in the practitioner of the vocation. These strands, or units, may then separately be considered as consisting of specific skills, managerial abilities, or other units that can be produced only by much repetition in direct training. Other strands will be found to consist largely of related skills or of related technical knowledge that may be imparted by methods fairly well known under the pedagogy of instruction. Still other strands, or units, will consist of the appreciations, the ideals, the social insights, the health knowledge that complement vocational skills and technical knowledge in rounding out the fully socialized worker in any particular field.

Far more difficult, but nevertheless practicable, is the quantitative evaluation of these several strands in terms of their relative importance or in terms of the varieties of training, instruction, or other form of education requisite to produce them.

Job analyses of certain industrial vocations for which school vocational education is now planned, reveal certain problems as respects which sharp differentiations must exist between training for these vocations and training for the professions, for agriculture, and for home-making.

In a large proportion of the industrial vocations, requirements for skill bulk relatively large as against requirements for related technical knowledge. Where the industrial vocation is a highly subdivided part of the social processes involved in the production and marketing of a given commodity, the related social education ought clearly to be a prominent part of the total process, as contrasted with that necessary as a separate thing in many forms of commercial, agricultural, and home-making education.

In other words, it becomes more and more clear that in these vocations the total processes of training any industrial workers to optimal proficiency require that one teacher for any group of pupils shall be responsible, not merely for training in skills, but also for instruction in related technical knowledge. Under these circumstances there can probably be no differentiation of the responsibility for the total processes of vocational training corresponding to the differentiations now found so largely in professional schools, as well as frequently in schools of agricultural and home-making education.

In medicine or engineering, for example, it seems, as stated above, entirely practical to have the technical subject of chemistry for either of these vocations taught by a person who is not himself a trained physician or engineer. In agricultural education it is frequently the case that technical courses in farm accounting and animal husbandry are offered by persons who would make no pretense to being themselves either trained farmers or competent to enter upon farming. In home-making it not infrequently happens that one teacher gives instruction and laboratory practice in cooking and another in sewing, neither of them being a competent practitioner outside of her own field.

It seems highly probable that this problem will have to be solved differently according to different fields of industrial work. Heretofore, in trade training it has been uncommon for the teacher of shop practice to be responsible also for the related technical studies, and still less for those largely undeveloped, but nevertheless very important, adjuncts probably to be called the related social studies. This has been due very largely to the fact that teachers employed from the industries, while they might do sufficiently well in directing practice of students, usually possess little or no ability to instruct in the more abstract subjects. It has also been due largely to the fact that the related studies paralleling any particular trade have been very ill-defined. Two consequences have followed. In the first place, each individual teacher teaching related studies to a class of boys endeavoring to learn carpentry, for example, has had to draw from miscellaneous sources for the problems of mathematics, drawing, mechanics, English, and the rest which it seemed expedient to teach. In the second place, almost no textbooks have been available bearing upon such specific subjects as carpenters' mathematics, automobile repair men's mechanics, machinists' drawing, and the like.

This condition has also permitted the construction of a large variety of books and manuals under such titles as "shop mathematics," "shop sciences," "practical drawing," and the like. To abstract from the vast amounts of chaff thus gathered the grains of wheat necessary to a particular vocation has proved a problem too great for a shop teacher.

One of the most serious remaining problems of industrial education, and one which has as yet received almost no adequate consideration, relates to the 'period of functioning' for which the training should be designed. For example, we have a student in a basic industrial school 16 years of age. Are we to think of his prospective proficiencies in his occupation over a period of thirty or more years, or should we concern ourselves primarily with his expected proficiency during the first five years subsequent to this training?

This problem is very closely connected with the problem of diagnosing the shiftings, upgradings, and other changes that take place in all fields where highly subdivided production prevails. It is highly probable that the large majority of industrial workers shift at least three times in their industrial careers, first from juvenile to young manhood vocations, and then to vocations suitable to their mature years and experience.

To some extent these transitions are aided by instruction and training procured in evening and other extension schools. The entire process is, in the main, haphazard, wasteful of economic resources, and destructive of morale.

To the present writer it seems very probable that industrial education will eventually be so shifted that short intensive full-time courses will prepare young people for entrance into juvenile vocations from which, after a period of a few years, they will seek advancement to young manhood vocations. For these latter, intensive, basic, full-time training will be fully as urgent and practicable as for the earlier juvenile vocations. In the same way men of twenty-five or upward, seeking advancement to foremanship or more skilled specialties, will again seek full-time vocational schools for periods of from 12 weeks upward for the purpose of specific, upgrading vocational training.

Under these conditions it would be of utmost importance that every basic vocational school should see its major objectives in terms of the productive usefulness of its trainees during the first five years or thereabouts after their emergence from their period of training. Under these conditions, too, industrial school teachers, should be trained to give much more specific and directly 'functioning' vocational training than is usually contemplated at present.

Another problem as to which very little is yet known is that of pedagogic standards in the various fields of industrial teaching. For example, in many places it may prove a relatively simple matter for a trained manual worker to train others in habits or skills appropriate to the vocation. For thousands of years, certainly, journeymen have thus trained apprentices without having given special time and pedagogic preparation to this work. It can readily be assumed that apprentice training is often slow and poor because of the pedagogic ignorance of the trainer. Discovery of this fact, however, does not indicate to us how much of pedagogic training of workers might give optimal results toward enabling them in turn to train small groups of learners in the skills and other habits essential to the trade or other industry in question.

Similarly, it may prove, on further inquiry, that while the teaching of technical knowledge appropriate to any given vocation is a simple matter so long as no intimate correlation or integration of the technical knowledge and skills is involved, that such teaching does become a difficult and series matter as soon as close integration or correlation is expected.

For example, it may be comparatively easy for a well-prepared academic teacher to give instruction in courses in carpenters' mathematics, steel industry history, or teachers' psychology, so long as the logical organization of this abstract subject matter constitutes the only needed progress and standards of attainment sought. It is probably true that no industrial school has succeeded in closely integrating this instruction in technical knowledge with the practical skills of its learners. The same criticism might well be made with regard to schools of medicine, normal schools, military training school, and agricultural colleges. In none of these do you find as yet any very purposive correlation of technical knowledge with shop or school practice. In this case, however, the deficiency is probably of far less serious import than it would be in industrial schools. All available evidence seems to point to the conclusion that gifted minds, that is, those that attain to high standards when measured by intelligence tests, are able to assimilate relatively large stores of technical knowledge as logically presented, and to draw therefrom in practical emergencies later as need arises. On the other hand, there is every probability that minds of average or less than average intelligence are only slightly able to do this. They need to acquire technical knowledge in close union with their practical powers of achievement if the two are to combine in the higher forms of vocational competency.

CONCLUSIONS

TENTATIVE FINDINGS AND IDEALS

It is submitted that experience to date in the analysis of the possibilities of vocational education, in job analyses of the various vocations, and in experimental work with programs for the training of teachers, justifies the following conclusions:

1. It is possible now to differentiate various vocations for which it is practicable for schools of appropriate types to give training in whole or in part. Further surveys will undoubtedly result in clearer differentiations of these specific vocations and will indicate the approximate numbers practicing them in any given community and the possibilities of supplementing apprenticeship and pick-up training by specialized vocational school training.

2. In such fields as agriculture, the commercial callings, and the like, steady progress is being made in defining, for purposes of vocational education, vocations actually practiced, thus enabling educators to escape from the indeterminateness of such terms as "commercial education," "agricultural education," and the like. Within the commercial world it is now clear that the vocation of stenographer-typist constitutes a very large, important, and fairly well defined field for vocational training. Certain other clerical callings, both junior and senior in scope, are being brought into relief. The general field of salesmanship has not yet been clearly broken up into its constituent distinctive vocations, but there is every prospect that that will be done at an early date.

3. The agricultural callings are made distinctive to some extent by specialization of function, and to some extent by regional con-

ditions. Thus, in current practice, can be distinguished the poultry farmer, the dairy farmer, the market gardener, the orchardist, and the like. Increasingly we are able to distinguish likewise the general farmer of the Iowa type, the general farmer of the uplands of Pennsylvania type, the cotton grower, and the like. In proportion as much of this is differentiated and defined, it will become possible to give explicit statement to the varieties and degrees of specific vocational training here profitable for each.

4. Home economics, usually treated as a unified field of technical instruction, may be expected presently, on the vocational home-making side, to differentiate into several types of more or less well-defined home-making vocations each requiring its appropriate standards of training.

5. The building trades, job printing, and a few other industrial vocations using relatively little power-driven machinery are probably now more clearly defined from the standpoint of possibilities of specific vocational training than are the almost numberless vocations found where power-driven machinery has entailed extensive and increasing subdivision of process and specialization of work.

Within a few years it should prove practicable to devise a total program for teacher training for at least a number of the trades and other industrial vocations for which school vocational training in whole or in part should prove expedient and necessary.

Such a program should almost certainly include the following elements:

a. Enrolling in the training school at 18 years, the prospective teacher should be allocated to wage-earning participation in his trade on some part-time basis whereby he could give sufficiently prolonged periods, perhaps 8, 12, or 16 weeks, to wage earning work, after which he would return to the school for a period of perhaps half as long for intensive study of the related technical knowledge subjects and related social knowledge subjects of the vocation in question. During this time, too, he could be directed in a moderate amount of reading of a pedagogical nature designed to be preliminary to his later pedagogic study.

b. After four years of this practical training and productive work, the prospective teacher should then turn his attention exclusively to pedagogic preparation. He should take the usual studies basic to the training of teachers, emphasis always being placed upon the peculiar character of the teacher vocation into which he is expected to go.

c. During the last, or sixth, year he should divide his time between further pedagogic studies and supervising practice teaching in successful industrial schools.

The net outcome of this training process should be a teacher adequately prepared to enter not only all ordinary teaching, but also any necessary related technical instruction and instruction in related subjects.

CHAPTER XI

LIST OF PUBLICATIONS FOUND HELPFUL IN TEACHER TRAINING COURSES IN INDUSTRIAL EDUCATION

Compiled by
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This bibliography contains only references which were supplied by teacher trainers in industrial education throughout the United States, in response to a questionnaire sent out in October, 1923, which solicited a list of books "found of special merit" that "were being used in the various teacher-training institutions in connection with the different courses."

The Roman numerals in parentheses indicate the field in which the books have been found helpful. These fields are as follows:

I. Philosophy and background (social and economic) of vocational education
II. History and development of industrial education
III. Organization and administration of industrial education
IV. Psychology and methods in industrial education
V. Types of industrial education: day, part-time, evening classes
VI. Employment, personnel, and plant training
VII. Bibliographies of industrial education
VIII. Miscellaneous

The Federal Board does not assume the responsibility of presenting this as the best that might be done in regard to a bibliography, but has merely brought together the replies made by about 25 percent of the 250 teacher trainers to whom the request for references was sent. Owing to a lack of time, no effort was made to follow up the original requests in order to get a larger return.[1]

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[1] In this list as submitted by the Industrial Education Service there were a number of references followed by question marks to indicate that they could not be found by the compiler either in the *Reader's Guide* or in any other reference books at his disposal. The editor has taken the responsibility of eliminating these books from the list. Beyond making a few corrections in titles with which he was familiar, the editor has made no further attempt to revise the list or verify the bibliography.—G.M.W.

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CONSTITUTION OF THE NATIONAL SOCIETY FOR THE STUDY OF EDUCATION

ARTICLE I

Name.—The name of this Society shall be "The National Society for the Study of Education."

ARTICLE II

Object.—Its purposes are to carry on the investigation and to promote the discussion of educational problems.

ARTICLE III

Membership.—SECTION 1. There shall be three classes of members—active, associate, and honorary.

SEC. 2. Any person who is desirous of promoting the purposes of this Society is eligible to active membership and shall become a member on approval of the Executive Committee.

SEC. 3. Active members shall be entitled to hold office, to vote, and to participate in discussion.

SEC. 4. Associate members shall receive the publications of the Society, and may attend its meetings, but shall not be entitled to hold office, or to vote, or to take part in the discussion.

SEC. 5. Honorary members shall be entitled to all the privileges of active members, with the exception of voting and holding office, and shall be exempt from the payment of dues.

A person may be elected to honorary membership by vote of the Society on nomination by the Executive Committee.

SEC. 6. The names of the active and honorary members shall be printed in the *Yearbook.*

SEC. 7. The annual dues for active members shall be $2.00 and for associate members $1.00. The election fee for active and for associate members shall be $1.00.

ARTICLE IV

Officers and Committees.—SECTION 1. The officers of this Society shall be a president, a vice-president, a secretary-treasurer, an executive committee, and a board of trustees.

SEC. 2. The Executive Committee shall consist of the president and four other members of the Society.

SEC. 3. The president and vice-president shall serve for a term of one year, the secretary-treasurer for a term of three years. The other members of the Executive Committee shall serve for four years, one to be elected by the Society each year.

SEC. 4. The Executive Committee shall have general charge of the work of the Society, shall appoint the secretary-treasurer, and may, at its discretion, appoint an editor of the *Yearbook.*

SEC. 5. A board of trustees consisting of three members shall be elected by the Society for a term of three years, one to be elected each year.

The Board of Trustees shall be the custodian of the property of the Society, shall have power to make contracts, and shall audit all accounts of the Society, and make an annual financial report.

Sec. 6. The method of electing officers shall be determined by the Society.

Article V

Publications.—The Society shall publish *The Yearbook of the National Society for the Study of Education* and such supplements as the Executive Committee may provide for.

Article VI

Meetings.—The Society shall hold its annual meetings at the time and place of the Department of Superintendence of the National Education Association. Other meetings may be held when authorized by the Society or by the Executive Committee.

Article VII

Amendments.—This constitution may be amended at any annual meeting by a vote of two-thirds of voting members present.

MINUTES OF THE CLEVELAND MEETING OF THE NATIONAL SOCIETY FOR THE STUDY OF EDUCATION, FEBRUARY 24-27, 1923

The first session of the Society, held in the Ball Room of the Hotel Cleveland, Saturday evening, February 24, was called to order at 8 o'clock by President Ernest Horn, who introduced Vice-President Agnes Rogers as presiding officer for the evening. The program was carried out as follows:

THE YEARBOOK ON ENGLISH COMPOSITION
Earl Hudelson, Professor of Education, University of West Virginia.

AIMS IN ENGLISH COMPOSITION
James F. Hosic, Associate Professor of Education, Teachers College, Columbia University, New York.

METHODS OF TEACHING ENGLISH COMPOSITION
Matthew H. Willing, Principal of Springfield High School, Springfield, Illinois.

THE MEASUREMENT OF ENGLISH COMPOSITION
Frank W. Ballou, Superintendent of Schools, Washington, D. C.

THE UNRELIABILITY OF THE MEASUREMENT OF ABILITY IN WRITTEN COMPOSITION
Walter S. Monroe, Director of Bureau of Educational Research, University of Illinois, Urbana, Illinois.

MEASUREMENTS OF ENGLISH COMPOSITION
Stuart A. Courtis, Director of Instruction, Teacher Training, and Research, Public Schools, Detroit, Michigan.

Discussion
Ervin E. Lewis, Superintendent of Schools, Rockford, Illinois.

The Secretary briefly explained the purpose and organization of the Society and called attention to the report of progress of the Society's Committee on the preparation of a *Yearbook* on "The Education of Gifted Children."

At the business meeting that followed, the only important item was the election of officers for the ensuing year. The report of the Nominating Committee presented by Supt. Ballou was adopted unanimously as follows:

For President, Charles H. Judd, School of Education, University of Chicago, Chicago, Illinois; for Vice-President, Lida B. Earhart, Teachers College, University of Nebraska, Lincoln, Nebraska; for Secretary-Treasurer, Guy M. Whipple, School of Education, University of Michigan, Ann Arbor, Michigan; for member of the Executive Committee to serve for four years, Stuart A. Courtis, Director of Instruction, Teacher Training, and Research, Public Schools, Detroit, Michigan; for member of the Board of Trustees, to serve for three years, Harold O. Rugg, The Lincoln School of Teachers College, Columbia University, New York City.

The second session, held Tuesday evening, February 27, at 8:30 o'clock, brought out an audience which filled the Ball Room to overflowing. About 1200 persons listened to what was generally regarded as one of the best programs ever given by the Society, and several hundred were unable to gain entrance.

Supt. Carleton W. Washburne of Winnetka, Illinois, who was to have spoken on "Curriculum Making and the Social Studies" arrived from Europe too late to reach Cleveland. Otherwise the following program was carried out as contemplated:

INTRODUCING THE YEARBOOK ON SOCIAL STUDIES
  Ernest Horn, President of the Society.

METHODS OF SECURING SOCIAL SCIENCE MATERIAL FOR THE SCHOOLS
  Charles H. Judd, Director of the School of Education, University of Chicago, Chicago, Illinois.

A COLLEGIATE SURVEY COURSE IN THE SOCIAL SCIENCES
  John J. Coss, Associate Professor of Philosophy, Columbia University, New York.

SOCIAL SCIENCE AND THE A.Q. IN DEMOCRACY
  Harold O. Rugg, The Lincoln School of Teachers College, Columbia University, New York.

THE CONTRIBUTION OF THE YEARBOOK TOWARD CURRICULUM-MAKING
  Frank M. McMurry, Professor of Elementary Education, Teachers College, Columbia University, New York.

Discussion
  Calvin O. Davis, Professor of Secondary Education, University of Michigan, Ann Arbor, Michigan.
  William C. Bagley, Professor of Education, Teachers College, Columbia University, New York.

In addition to the formal discussion, remarks were made by Professor Charles McMurry and the evening was closed by a summary and rejoinder on the part of Dr. Rugg.

GUY M. WHIPPLE,
Secretary-Treasurer.

FINANCIAL REPORT OF THE SECRETARY-TREASURER OF THE NATIONAL SOCIETY FOR THE STUDY OF EDUCATION

January 1, 1923, to December 31, 1923, Inc.

RECEIPTS FOR 1923

Balance on hand, January 1, 1923			$10,637.41
From sale of *Yearbooks* by the Public School Publishing Company:			
June to December, 1922	$4,637.34		
January to June, 1923	2,668.55	$7,305.89	
Interest on savings account, bonds, etc.:			
Interest on savings to Dec. 31, 1923	$ 30.00		
Interest on registered Liberty bond	42.50		
Interest on other Liberty bonds	50.01		
Interest on royalties	20.00		
Interest on Dominion of Canada bond	55.00		
Interest on Continental Gas & Electric bond	60.00		
Interest on U. S. Treasury bond	21.13		
Interest on Detroit-Edison bond	25.00	$ 303.64	
Securities received:			
Detroit-Edison 5% bond (Cost Value)		940.00	
Dues from Active and Associate Members		$2,946.25	
Total income for the year			$11,495.78
Total receipts, including initial balance			$22,133.19

EXPENDITURES FOR 1923

Publishing and Distributing *Yearbooks:*		
Reprinting 500 *12th Yearbook*, Part I	$ 137.20	
Reprinting 500 *12th Yearbook*, Part II	119.30	
Reprinting 500 *17th Yearbook*, Part I	168.30	
Reprinting 2000 *18th Yearbook*, Part II	300.30	
Reprinting 500 *19th Yearbook*, Part I	213.70	
Plates for *19th Yearbook*, Part I	107.80	
Reprinting 1000 *20th Yearbook*, Part I	302.20	
Plates for *20th Yearbook*, Part I	94.62	
Reprinting 2000 *20th Yearbook*, Part I	453.75	
Reprinting 2000 *20th Yearbook*, Part II	385.50	
Reprinting 3500 *21st Yearbook*	752.50	
Printing 4000 *22nd Yearbook*, Part I	1,275.04	
Reprinting 1000 *22nd Yearbook*, Part I	228.80	
Printing 5000 *22nd Yearbook*, Part II	2,572.20	
Reprinting 3000 *22nd Yearbook*, Part II	939.40	
Mailing *22nd Yearbook*	431.20	
Expense preparing *22nd Yearbook*, Part II	45.60	
Expenses Committee on *23rd Yearbook*, Part I	377.09	
Expenses in preparing *23rd Yearbook*, Parts I and II	139.55	
Premium on fire insurance ($5000)	13.75	
Expense trip Bloomington, Illinois, editing	15.52	
Total cost of *Yearbooks*		$ 9,073.32

Secretary's Office:

Secretary's salary, one year, to end of Cleveland meeting	$ 750.00	
Expenses, representing Society on Council A. A. A. S., Boston meeting	60.18	
Expenses, attending Cleveland meeting	71.92	
Annual dinner of officers and speakers	64.50	
Bookkeeping and clerical assistance	79.95	
Stamps	83.00	
Stationery	74.65	
Telegrams	18.03	
Supplies	8.79	
Rent, safety deposit box	2.00	
Total for Secretary's Office		$ 1,213.02

Investments:

Detroit-Edison 5% bond (face value $1000, plus accrued interest $6.50)	$ 946.50	$ 946.50
Total expenditures for 1923		$11,232.84

SUMMARY

Total expenditures for 1923		$11,232.84
Balance on hand, December 31, 1923:		
Savings account	$1,030.00	
Checking account	2,567.44	
U. S. A. Treasury Certificates	800.00	
Liberty bonds (Cost Value)	1,816.97	
Dominion of Canada Bond (Cost Value)	979.75	
Continental Gas & Electric Bond (Cost Value)	930.00	
U. S. A. Treasury Bond	1,000.00	
Detroit-Edison Bond (Cost Value)	940.00	
Liberty Bond Interest Account	836.19	$10,900.35
Total		$22,133.19

MEMBERSHIP, JANUARY 24, 1924

(Paid in Advance for 1924)

Honorary Members	3
Active Members	583
Associate Members	811

GUY M. WHIPPLE, *Secretary-Treasurer.*

HONORARY AND ACTIVE MEMBERS OF THE NATIONAL SOCIETY FOR THE STUDY OF EDUCATION

HONORARY MEMBERS

DeGarmo, Dr. Charles, Cocoanut Grove, Fla.
Dewey, John, Columbia Univ., New York City, N. Y.
Hanus, Paul H., Harvard Univ., Cambridge, Mass.

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Information Concerning the National Society for the Study of Education

1. Purpose. The purpose of the National Society is to promote the investigation and discussion of educational questions. To this end it holds an annual meeting and publishes a series of Yearbooks.

2. Eligibility to Membership. Any person who is interested in receiving its publications may become a member upon application to the Secretary and subsequent approval by the Executive Committee. Membership may not be had by libraries or by institutions.

3. Period of Membership. Applicants for membership may not date their entrance back of the current calendar year, and all memberships terminate automatically on December 31st, unless the dues for the ensuing year are paid as indicated in Item 6.

4. Classes of Members. Application may be made for either active or associate membership. Active members pay two dollars dues annually, receive two copies of each publication, are entitled to vote, to hold office and to participate in discussion. Associate members pay one dollar dues annually, receive one copy of each publication, may attend the meetings of the Society, but may not vote, hold office or participate in discussion.

5. Election Fee. New active and new associate members are required the first year to pay, in addition to the dues, an election fee of one dollar.

6. Payment of Dues. Statements of dues are rendered in October for the following calendar year. By vote of the Society at the 1919 meeting, ''any member so notified whose dues remain unpaid on January 1st, thereby loses his membership and can be reinstated only by paying the election fee of one dollar required of new members.'' School warrants and vouchers from institutions must be accompanied by definite information concerning the name and address and class of membership of the person for whom membership fee is being paid.

7. Distribution of Yearbooks to Members. The Yearbooks, ready each February, will be mailed from the office of the publishers and only to members whose dues for that year have been paid. Members who desire Yearbooks prior to the current year must purchase them directly from the publishers (see Item 8).

8. Commercial Sales. The distribution of all Yearbooks prior to the current year and also of those of the current year not regularly mailed to members in exchange for their dues is in the hands of the publishers, not of the secretary. For such commercial sales, communicate directly with the Public School Publishing Company, Bloomington, Illinois, who will gladly send a price list covering all the publications of this Society and of its predecessor, the National Herbart Society.

9. Yearbooks. The Yearbooks are issued in parts (usually two) every February. They comprise from 250 to 500 pages annually. Unusual effort has been made to make them on the one hand of immediate practical value and on the other hand representative of sound scholarship and scientific investigation. Many of them are the fruit of co-operative work by committees of the Society.

10. Meetings. The annual meeting, at which the Yearbooks are discussed, is held in February at the same time and place as the meeting of the Department of Superintendence of the National Education Association.

Applications for membership will be handled promptly at any time on receipt of name and address.

GUY M. WHIPPLE, Secretary-Treasurer.

University of Michigan,
Ann Arbor, Michigan.

BOUND VOLUMES
OF
THE YEARBOOKS OF THE SOCIETY
I-XXIX

The yearbooks of the National Society for the Study of Education form the outstanding feature of its activities. In the earlier days of the Society these publications were comparatively small in size, though not in importance of their topics or in authoritativeness of their producers. From the first, the policy was adopted of issuing the yearbooks in advance of the meeting at which they were to be discussed. As long as the membership of the Society was limited to a small group of active participants, the annual meetings were perhaps of even more importance than the printed material which formed the subject matter for discussion. But as the Society's membership increased and as the number of non-members attracted to its meetings also increased, the difficulty of holding these intimate discussions likewise increased, the meetings gradually shifted in character, so that the formal presentation of addresses came to assume more, and the discussions less importance —a change which many members deplored, but which it has seemed impossible to avoid. At the same time, the commercial sales of yearbooks not distributed to members in return for their dues correspondingly increased and gradually affected the functions of the Society in ways that could hardly have been foreseen at the outset. More particularly, the financial returns from the sales of its yearbooks have produced for the Society a source of income which has increased like the proverbial snowball, and which has brought it about that the Society is to-day in some respects more nearly a publishing society than a society for the holding of meetings and discussion of educational topics. In other words, the production and distribution of its yearbooks, rather than the holding of its annual meetings, has come to be the chief method by which the Society is now influencing the trend of educational thinking and practice. As will be seen by a glance at the statements given in the annual reports of the Secretary, the sums now available to the Society from the sale of its yearbooks have reached very considerable proportions. The policy of the officers of the Society has been consistently to return these profits to the members of the Society, partly by issuing yearbooks that often cost most to deliver to its members than the dues received in return, partly by subsidizing more effectively the work of the various committees that are at work upon the production of forthcoming yearbooks.

All in all, then, the yearbooks of the National Society for the Study of Education are in many respects a feature unique among educational organizations. As to their intrinsic worth as educational documents, there need be no argument; their ready sale, the repeated requests for permission to quote from their pages, and the numerous enthusiastic unsolicited endorsements from our members are sufficient testimony.

SUMMARY OF YEARBOOKS I-XXIX

The following is a list of the fifty-six books published to date (1930) together with the names of the contributors and a brief synopsis of the contents of each book. Perusal of this summary will show the scope and importance of the Society's publications.

VOLUME ONE

THE FIRST YEARBOOK, PART I (1902)

SOME PRINCIPLES IN THE TEACHING OF HISTORY

Lucy M. Salmon

This first yearbook of the Society is a concise and stimulating discussion of the principles underlying the teaching of history. The author devotes various sections of the paper to a discussion of the place of the sources in the school course, the historian in relation to the selection of materials, the relation of history to other subjects, and changes in the methods of teaching it. The concluding section gives an outline of the history recommended for use in the twelve grades.

THE FIRST YEARBOOK, PART II (1902)

THE PROGRESS OF GEOGRAPHY IN THE SCHOOLS

W. M. Davis and H. M. Wilson

Some of the best principles which govern the teaching of geography to-day are set forth in this early yearbook of the Society. Mr. Davis, the author of the major portion of the volume, deplores the deficiency of higher learning in the field, urges better training of teachers in the subject matter, stresses the need of subordinating detailed items to general principles, points out the importance of showing causal relations in teaching the subject, and advocates better and more extensive use of equipment of geographical laboratories. Some space is devoted to a discussion of ontography, systematic and regional physiography, and systematic and regional geography, with brief reference to their places in the curriculum. The concluding chapter, by Mr. Wilson, discusses the relation of geography to the sciences.

THE SECOND YEARBOOK, PART I (1903)

THE COURSE OF STUDY IN HISTORY IN THE COMMON SCHOOLS

Isabel Lawrence, Charles A. McMurry, Frank McMurry,
Edward C. Page, and Emily J. Rice

The major portion of this yearbook is devoted to a course of study in history for grades three to eight inclusive, prepared by Charles A. McMurry. Particular recognition is given to the intimate relation between history and reading and geography. A brief course in geography is outlined for use with the subject matter in history and reading. The final chapters of the volume are a series of interesting papers discussing Miss Salmon's presentation of the principles of teaching history, which appeared as Part I of the First Yearbook.

THE SECOND YEARBOOK, PART II (1903)

THE RELATION OF THEORY TO PRACTICE IN EDUCATION

David Felmley, Manfred J. Holmes, John A. Keith, and Levi Seeley

Under the chairmanship of John A. Keith, a committee of the Society undertook a careful study of the relation of theory to practice in education in (a) universities, (b) normal schools, and (c) city training schools. The plans of the committee embraced a historical account of earlier procedure in each of these types of institutions, an account of contemporary procedure, an investigation of the most effective relation of theory to practice under various forms of institutional organization, and a study of the relative values and essentials of some nine fields of subject matter offered in those institutions. This yearbook is devoted largely to the Committee's report on the situation in the normal schools.

THE THIRD YEARBOOK, PART I (1904)

THE RELATION OF THEORY TO PRACTICE IN THE EDUCATION OF TEACHERS

Sarah C. Brooks, John Dewey, C. H. Farnsworth, F. M. McMurry,
G. R. Richards, D. E. Smith, and T. D. Wood

This yearbook consists of three sections: (1) a paper by John Dewey, entitled "The Relation of Theory to Practice in Education," (2) further treatment of the same topic in a paper by Sarah C. Brooks, and (3) a description of the "Theory and Practice at Teachers College, Columbia University" by the remaining contributors. The secretary's report, referring to the meeting at which this yearbook was discussed, states: "The entire time was devoted to the discussion of Dr. John Dewey's paper. . . . This paper stirred up a good deal of vigorous thinking and provoked a great deal of highly valuable discussion." Dr. Dewey pointed out the artificiality of the conditions under which so-called practice is secured in those situations where young teachers gain their experience by taking immediate control of a room under the observation of a superior supervisory officer. As a substitute for this method, he proposed that while the student was acquiring his knowledge of subject matter, theory, and principles, he should devote long periods to the observation of both skilled teachers and children at work in the classroom. This was to be followed by an assistantship to the teacher, which should lead gradually to experience in actual teaching.

THE THIRD YEARBOOK, PART II (1904)

NATURE STUDY

Wilbur S. Jackman

The author of this yearbook has three objects in mind: to show (1) that nature study must be presented in accordance with the general principles of psychology which apply to all other subjects; (2) that it is necessary to start with broad, general views or pictures of nature and proceed gradually to the details; and (3) that nature study forms but a part of education, since its relationships reach into all other subjects which go to make up the whole. He suggests salient centers of subject matter and points out principles of method, carrying through the whole a due regard for the needs of the young and growing mind. The book is illustrated and contains a suggestive course of study.

THE FOURTH YEARBOOK, PART I (1905)

THE EDUCATION AND TRAINING OF SECONDARY TEACHERS

S. D. Brooks, J. F. Brown, J. S. Brown, C. DeGarmo, E. G. Dexter, E. C. Elliott,
C. B. Gilbert, G. S. Hall, R. P. Halleck, M. J. Holmes, E. J. James,
L. H. Jones, L. C. Lord, A. F. Nightingale, M. V. O'Shea,
H. H. Seerley, C. C. Van Liew, and J. N. Wilkinson

The two central problems of this yearbook are: (1) What constitutes the ideal secondary teacher?; and (2) By what selective process and preparation can the realization of this ideal be promoted? These problems are considered under five divisions: (1) an historical sketch, which seeks to trace briefly the genesis of secondary schools in their relation to the life of the people; (2) a presentation of the opinions of five experienced secondary-school men as to what constitutes the ideal secondary-school teacher; (3) an examination of the status and personnel of secondary teachers in the United States; (4) a survey of the provisions for the preparation of secondary-school teachers made by universities, normal schools, and colleges; and (5) a consensus of opinion as to the relative advantages and limitations of universities and normal schools in preparing secondary-school teachers.

THE FOURTH YEARBOOK, PART II (1905)

THE PLACE OF VOCATIONAL SUBJECTS IN THE HIGH-SCHOOL CURRICULUM

J. Stanley Brown, Gilbert B. Morrison, and Ellen H. Richards

Three main groups of vocational studies have been treated in this yearbook: commercial work, manual training, and domestic science. These topics are discussed in relation to their then present status, and their possibilities for future development. The concluding chapters of the book are devoted to a discussion of Part I of the Fourth Yearbook.

VOLUME TWO

THE FIFTH YEARBOOK, Part I (1906)

On the Teaching of English in Elementary and High Schools

George P. Brown and Emerson Davis

This yearbook opens with a theoretical dissertation on what Mr. Brown considers the philosophical background for the efficient teaching of English. From this he proceeds to a more practical discussion of methods of teaching English in the primary and grammar grades and in the high school. The latter part of the book describes the course of study in English in the primary grades of the public schools of Cleveland.

THE FIFTH YEARBOOK, Part II (1906)

The Certification of Teachers

Ellwood P. Cubberley

This yearbook sets forth in some detail the conditions prevailing in 1906 with reference to the certification of teachers, traces the development of certain tendencies relating to the problem, and offers suggestions as to lines along which improvement might be made.

THE SIXTH YEARBOOK, Part I (1907)

Vocational Studies for College Entrance

W. J. S. Bryan, C. A. Herrick, H. W. Holmes, T. de Laguna, and V. Prettyman

Continuing the discussion begun in Part II of the Fourth Yearbook, this yearbook takes up those aspects of vocational subjects relating to college entrance.

THE SIXTH YEARBOOK, Part II (1907)

The Kindergarten and Its Relation to Elementary Education

Ada Van Stone Harris, Patty S. Hill, E. A. Kirkpatrick, Maria Krause-Boelté, Harriette M. Mills, and Nina C. Vandewalker

This yearbook is devoted to an investigation of the relation between the kindergarten and elementary school. It was undertaken in order to further the effort to establish the kindergarten more firmly as a part of the public-school system by bridging the chasm which existed between it and the primary grades. It contains a résumé of Froebelian principles, a presentation of both the conservative and the progressive phases of kindergarten education, the history of kindergarten influence in elementary education, and a discussion of the evolution of the kindergarten program.

THE SEVENTH YEARBOOK, PART I (1908)

THE RELATION OF SUPERINTENDENTS AND PRINCIPALS TO THE TRAINING AND PROFESSIONAL IMPROVEMENT OF THEIR TEACHERS

Charles D. Lowry

This yearbook is largely a summary of replies to a questionnaire sent to members of the Society and others, asking (1) for opinions as to the need for carrying on systematic work for training the teaching force to a higher degree of efficiency, and (2) for statements of the nature of such work in those schools in which it was carried on. The replies pointed to the conclusion that the greatest essential for a teacher's life and growth is vigorous, systematic study, preferably in courses under the direction of higher institutions of learning. Various plans for attaining this result are presented in this volume.

THE SEVENTH YEARBOOK, PART II (1908)

THE COÖRDINATION OF THE KINDERGARTEN AND THE ELEMENTARY SCHOOL

Margaret Giddings, B. C. Gregory, Jennie B. Merrill, and Bertha Payne

"Supplement to Sixth Yearbook, Part II" is the secondary title of this yearbook. Following the somewhat theoretical discussion of the problem set forth in the earlier yearbook, this one attacks the more practical consideration of how to coördinate the work of the kindergarten and the school. It discusses ways and means of securing organic continuity between the two, shows how the right training of teachers may further the work of coördination, and sets forth the relation of supervision to the question at issue.

THE EIGHTH YEARBOOK, PART I (1909)

EDUCATION WITH REFERENCE TO SEX: PATHOLOGICAL, ECONOMIC, AND SOCIAL ASPECTS

Charles Richmond Henderson

THE EIGHTH YEARBOOK, PART II (1909)

EDUCATION WITH REFERENCE TO SEX: AGENCIES AND METHODS

Charles Richmond Henderson and Helen C. Putnam

The two parts of the Eighth Yearbook are meant to be considered as a single study. In Part I of the study evidence, drawn from the testimonies and experiences of well-known physicians and social hygienists, is offered to reveal the urgent need for instructing youth in sex hygiene. Part II gives practical suggestions to parents and teachers regarding formal instruction in matters of sex. The study concludes with a helpful paper by Dr. Putnam, entitled "Sex Instruction in the Schools," which is devoted chiefly to showing how this instruction may be presented in the school naturally and wholesomely in connection with biology.

VOLUME THREE

THE NINTH YEARBOOK, Part I (1910)

Health and Education

Thomas Denison Wood

A brief synopsis is given in this yearbook of the different phases of educational administration, supervision, and instruction which have to do with health. It treats of health examinations, school sanitation, the hygiene of instruction, health instruction, and physical education. A helpful bibliography concludes the volume.

THE NINTH YEARBOOK, Part II (1910)

The Nurse in Education

M. Adeline Nutting, Mary L. Read, Isabel M. Stewart, and Thomas D. Wood

Supplementing the discussion in Part I, this volume is devoted to the rôle in education of the professionally trained nurse. It presents some of the important results attained in this field, outlines the scope and possibilities of the work, suggests the relationship of the nurse to the community, and indicates the coördination of the nurse's work with that of parent, regular teacher, school physician, teacher of physical education, and other special teachers whose particular subjects bring them into relation with the health side of education.

THE TENTH YEARBOOK, Part I (1911)

The City School as a Community Center

C. W. Crampton, Mrs. E. C. Grice, Mrs. S. E. Hyre, H. C. Leipziger,
C. A. Perry, E. W. Stitt, E. J. Ward, and R. D. Warden

The contributors to this volume have described in a concrete way the extent and character of experiments carried on under their direction for making the school a community center. They include in their discussion methods employed, results secured, concrete incidents, difficulties, criticisms, and suggestions encountered in their experiments, together with comparisons of similar work conducted in other communities.

THE TENTH YEARBOOK, Part II (1911)

The Rural School as a Community Center

E. C. Bishop, B. H. Crocheron, B. M. Davis, Jessie Field, A. B. Graham,
F. W. Howe, O. J. Kern, and M. T. Scudder

This volume supplements Part I, and treats in a similar manner the problems and considerations involved in making the rural school a community center. It concludes with a bibliography on city and rural schools as social centers.

THE ELEVENTH YEARBOOK, PART I (1912)

INDUSTRIAL EDUCATION: TYPICAL EXPERIMENTS DESCRIBED AND INTERPRETED

J. F. Barker, M. Bloomfield, B. W. Johnson, P. Johnston, L. M. Leavitt,
G. A. Mirick, M. W. Murray, C. F. Perry, A. L. Safford,
and H. B. Wilson

In this yearbook an attempt is made to bring together accounts of actual progress made in organizing schools for industrial education, to interpret the various lines of experimentation undertaken, and to demonstrate practical possibilities. Each contributor was requested to describe the history, organization, and results of industrial education in his school, to compare his with other schools of the same type, and to show how his particular type of undertaking might contribute toward the whole problem of industrial education. (See the Twenty-Third Yearbook, Part II, for further treatment of this topic.)

THE ELEVENTH YEARBOOK, PART II (1912)

AGRICULTURAL EDUCATION IN SECONDARY SCHOOLS

H. F. Button, F. R. Crance, D. J. Crosby, W. H. French, W. R. Hart,
A. C. Monahan, R. W. Stimson, and G. F. Warren

The aim of this yearbook was to present accounts of what was actually being done in secondary agricultural training in various parts of the United States at the time it was prepared. It represents an analysis of the typical experiments which were under way at that time, and gives some interpretation of each plan and its results.

THE TWELFTH YEARBOOK, PART I (1913)

THE SUPERVISION OF CITY SCHOOLS

Franklin Bobbitt, John W. Hall, and J. D. Wolcott

Professor Bobbitt, who contributes the major portion of this yearbook, treats the question of supervision under seven main heads, the most important of which are: the need for definite standards of achievement (with special reference to achievement tests); the necessity of determining under actual conditions the most efficient methods for actual service, and then insisting upon them; the importance of standard qualifications for teachers, with some account of a rating scale; the need for standard preliminary training of teachers; the need for training during service; and the importance of defining for teachers the extent, standards, and methods of work that are expected. The appendix, by Professor Hall, gives an account of the supervision of beginning teachers in Cincinnati. Mr. Wolcott contributes a bibliography on city-school supervision.

THE TWELFTH YEARBOOK, PART II (1913)

THE SUPERVISION OF RURAL SCHOOLS

A. S. Cook, J. Davis, L. J. Hanifan, U. J. Hoffman, W. Lund, A. C. Monahan,
E. M. Rapp, J. E. Warren, and J. D. Wolcott

This is the third yearbook of the National Society to deal with an important phase of the administration of rural schools. The several authors give accounts of what was actually being achieved in typical situations in various parts of the United States at the time the yearbook appeared.

VOLUME FOUR

THE THIRTEENTH YEARBOOK, PART I (1914)

SOME ASPECTS OF HIGH-SCHOOL INSTRUCTION AND ADMINISTRATION

E. R. Breslich, L. D. Coffman, W. A. Jessup, and H. C. Morrison

The three sections of this yearbook are devoted to a discussion of reconstructed mathematics, supervised study, and North Central High Schools, respectively. The first discusses very concretely needed re-adjustments in the subject of mathematics. The second presents the fundamental principles at the basis of the movement for supervised study, together with a review of the experiments that had been tried in various parts of the country. The last paper shows that a clear understanding of existing conditions with respect to the quality of the teaching staff is one of the most important steps in the direction of reconstruction of the subjects of the curriculum.

THE THIRTEENTH YEARBOOK, PART II (1914)

PLANS FOR ORGANIZING SCHOOL SURVEYS, WITH A SUMMARY OF TYPICAL SCHOOL SURVEYS

Charles H. Judd and Henry L. Smith

The first paper in this volume treats the problem of school surveys from three angles: the conditions necessitating careful study of local school situations; the forces that can most safely and profitably be intrusted with making local surveys; and a possible method of approach to the problem in cities of from five to fifty thousand inhabitants. The second paper, by Professor Judd, includes accounts of all major surveys up to 1914, and gives a view of the different types of such inquiries.

THE FOURTEENTH YEARBOOK, PART I (1915)

MINIMUM ESSENTIALS IN ELEMENTARY-SCHOOL SUBJECTS—STANDARDS AND CURRENT PRACTICES

W. C. Bagley, S. A. Courtis, F. N. Freeman, W. S. Gray, H. W. Holmes,
J. F. Hosic, W. A. Jessup, R. G. Jones, H. C. Pryor,
F. E. Thompson, and H. B. Wilson

This yearbook is the 1915 report of investigators coöperating with the Committee of the Department of Superintendence of the National Education Association on Economy of Time in Education, H. B. Wilson, chairman. Three other important yearbooks of the Society (XVI, Part I; XVII, Part I; and XVIII, Part II) are devoted to the subsequent reports of this important committee. This report has to do with means of developing a program for economizing time in the elementary school. A general survey is presented, showing how time is at present distributed in representative cities and describing typical experiments for gaining economy. The bulk of the report deals with minimal standards in reading, handwriting, spelling, composition, grammar, arithmetic, geography, history, and literature, and represents a series of efforts by different contributors to determine for these subjects just what topics or aspects are truly essential.

THE FOURTEENTH YEARBOOK, Part II (1915)

Methods for Measuring Teachers' Efficiency

Arthur C. Boyce

The author of this monograph calls attention first to the need for rating teachers and to the many inadequacies of the schemes for rating that are in common use. To meet this need and overcome these weaknesses, he proposes a method for rating which features a selected list of traits, a careful definition of these traits, and a graphic method for doing the rating. He also sets forth the results obtained by his method and discusses the relative importance of the several qualities of merit in teachers. Mr. Boyce's rating scale has attracted much attention and, in its original form or with variations, has been employed in the rating of large numbers of teachers.

THE FIFTEENTH YEARBOOK, Part I (1916)

Standards and Tests for the Measurement of the Efficiency of Schools and School Systems

B. T. Baldwin, F. W. Ballou, D. C. Bliss, B. R. Buckingham, H. G. Childs,
S. A. Courtis, E. P. Cubberley, C. H. Judd, George Melcher, E. E.
Oberholtzer, J. B. Sears, Daniel Starch, G. D. Strayer, M. R.
Trabue, and G. M. Whipple

This volume is the report of the Committee of the National Council of Education of the National Education Association, under the chairmanship of G. D. Strayer, assisted by several invited collaborators. The fifteen chapters are grouped into two sections. Section I deals with the derivation of scales and units of measurement, including scales for physical growth and for arithmetic, score cards for city school buildings, and completion tests for school use. Section II deals with the application of scales and units of measurement in the work of educational supervision and administration. Among the systems from which accounts of the use of measuring scales are reported are Boston; Montclair; Bloomington, Indiana; Detroit; Salt Lake City; Kansas City, Missouri; Tulsa, Oklahoma; Oakland, California; Cleveland, Ohio; and Madison, Wisconsin.

VOLUME FIVE

THE FIFTEENTH YEARBOOK, Part II (1916)

The Relationship Between Persistence in School and Home Conditions

Charles E. Holley

The author of this monograph investigated on a fairly comprehensive scale the question: What factors determine the number of years of schooling received by pupils in the public schools? Among the conclusions reached are these: (1) There is a high correlation between the general cultural advantages of a home and the schooling the children will receive. (2) Environmental influences more often cause a child to stop attending school than lack of ability. (3) Early elimination from school is largely due to factors over which the school has little or no control. (4) High schools are largely attended by the children of the ''better class.'' (5) Marriages are distinctly affected by ''educational selection.'' (6) A family tradition of schooling is effective in inducing unusual persistence in school in somes cases.

THE FIFTEENTH YEARBOOK, Part III (1916)

The Junior High School

Aubrey A. Douglass

This monograph, which is accompanied by a bibliography of 173 titles, presents an excellent account of the junior high school as it existed in 1916. In the Appendix, particularly, will be found a general summary of the situation based on information from 100 American cities. The body of the volume discusses the general problems involved, the arguments for and against this type of school, its curriculum, its housing, and the characteristics of adolescence that it attempts to meet and utilize.

THE SIXTEENTH YEARBOOK, Part I (1917)

Second Report of the Committee on Minimal Essentials in Elementary-School Subjects

W. C. Bagley, W. W. Charters, F. N. Freeman, W. S. Gray, Ernest Horn,
J. H. Hoskinson, W. S. Monroe, C. F. Munson, H. C. Pryor,
L. W. Rapeer, G. M. Wilson, and H. B. Wilson

This yearbook is the 1917 report of investigators coöperating with the Committee on Economy of Time of the Department of Superintendence of the National Education Association, H. B. Wilson, chairman, and is the second printed report of that committee. It contains a further report on every subject discussed in the first report (Fourteenth Yearbook, Part I) and also a preliminary report on physical education. In this report the emphasis is upon the social value of the content of the several school subjects as a basis for the instruction given in them.

THE SIXTEENTH YEARBOOK, Part II (1917)

The Efficiency of College Students as Conditioned by Age at Entrance and Size of High School

B. F. Pittenger

The author of this monograph sought by statistical methods to answer two questions: Is the quality of work done by college students affected by the age at which they enter or by the size of the high school from which they come? His results, based on a study of 828 students at the University of Minnesota, show, among other things, (1) that those entering before 18 years of age did better work than those who entered at 18 or later, (2) that graduates of public schools did better work than graduates of military, private, or church schools, (3) that graduates of large schools did better work than graduates of small schools, (4) that the women did better work than the men, and (5) that elimination from the college, especially in the freshman year, is highly qualitative, in that the good students tend to remain and the poor ones to leave.

THE SEVENTEENTH YEARBOOK, PART I (1918)

THIRD REPORT OF THE COMMITTEE ON ECONOMY OF TIME IN EDUCATION

W. C. Bagley, B. B. Bassett, M. E. Branom, Alice Camerer, J. E. Dealey,
C. A. Ellwood, E. B. Greene, A. B. Hart, J. F. Hosic, E. T. Housh,
W. H. Mace, L. R. Marston, H. C. McKown, A. E. Mitchell,
W. C. Reavis, D. Snedden, and H. B. Wilson

This is the 1918, or third (printed) report of the Committee of the Department of Superintendence of the National Education Association on Economy of Time in Education, and is prepared by various coöperating investigators. Like the first and second reports, printed as yearbooks of this Society, it deals primarily with studies concerning the minimal essentials of various elementary-school subjects, including arithmetic, geography, reading, composition, civics, and history. A special feature of this report is a symposium on the purposes of historical instruction in the seventh and eighth grades, arranged by W. C. Bagley, and contributed to by Professors Dealey, Ellwood, Greene, Hart, Mace, and Snedden. With the exception of this symposium, the various articles in this yearbook deal with actual investigations of the content of the curriculum, especially in its relation to the needs of daily life.

VOLUME SIX

THE SEVENTEENTH YEARBOOK, PART II (1918)

THE MEASUREMENT OF EDUCATIONAL PRODUCTS

E. J. Ashbaugh, W. A. Averill, L. P. Ayres, F. W. Ballou, Edna Bryner,
B. R. Buckingham, S. A. Courtis, M. E. Haggerty, C. H. Judd,
George Melcher, W. S. Monroe, E. A. Nifenecker,
and E. L. Thorndike

The writers of this yearbook prepared it as representatives of the National Association of Directors of Educational Research (now the Educational Research Association) with the intent "to gather into one handy volume a rather complete statement of the various aspects of a new movement which seems destined to have a profound and permanent influence upon American Education." From the ready reception accorded the yearbook, it is not too much to say that this "rather complete statement" had, itself, a quite considerable influence in furthering the movement for educational measurement. Among the topics considered were: the history of educational measurement, the nature and purposes of such measurement, the organization of bureaus of research, a list of existing tests and scales, an exposition of statistical terms and methods, and suggestions for future development.

THE EIGHTEENTH YEARBOOK, PART I (1919)

THE PROFESSIONAL PREPARATION OF HIGH-SCHOOL TEACHERS

G. N. Cade, S. S. Colvin, Charles Fordyce, H. H. Foster, T. W. Gosling, W. S. Gray, L. V. Koos, A. R. Mead, H. L. Miller, F. C. Whitcomb, and Clifford Woody

The first 160 pages of this ''double number'' are devoted to a description by H. L. Miller of the University of Wisconsin plan for the preparation of high-school teachers. Section II contains three chapters by Gosling, Colvin, Koos, and Woody on miscellaneous aspects of the problem of teacher-training. Section III, which the remaining contributors prepared, is a report of the Committee of the Society of College Teachers of Education on Practice Teaching for Secondary Teachers. The volume as a whole thus contains not only important analyses of prevailing conditions in the training of high-school teachers, but also suggestive accounts of several novel experiments looking toward the bettering of the deficiencies found to exist in the preparation of such teachers.

THE EIGHTEENTH YEARBOOK, PART II (1919)

REPORT ON ECONOMY OF TIME IN LEARNING: FOURTH REPORT OF COMMITTEE ON ECONOMY OF TIME IN EDUCATION

F. C. Ayer, F. N. Freeman, W. S. Gray, Ernest Horn, W. S. Mouroe, C. E. Seashore, and H. B. Wilson

This group of investigators operated as a sub-committee of the committee that was responsible for three preceding yearbooks bearing similar titles. The group took as its task the formulation of rules, or recipes, by which economy could be secured in education, not by better selection of topics for instruction (stressed in the preceding reports), but by improved methods of teaching which had been selected. The yearbook, accordingly, takes the form of a series of statements of fundamental principles which investigation, or the best expert opinion, has shown should be followed in teaching writing, reading, spelling, arithmetic, drawing, and music. This 'meaty' report has been much quoted and decidedly influential.

VOLUME SEVEN

NINETEENTH YEARBOOK, PART I (1920)

NEW MATERIALS OF INSTRUCTION

A Committee of the Society was created in 1918 under the title ''Committee on Materials of Education,'' which had for its members Messrs. W. C. Bagley, J. C. Brown, C. E. Chadsey, L. D. Coffman, E. P. Cubberley, E. C. Elliott, H. C. Morrison, G. D. Strayer, G. M. Whipple, and C. H. Judd, chairman. With the coöperation of numerous persons this Committee assembled as their first report detailed examples of new materials of instruction, particularly in the fields of reading, geography, history, nature study, mathematics, and community life. The Committee stressed the importance of inducing school boards to set aside each year a certain amount of instructional energy for the purpose of making similar new materials of instruction. (For further discussion of this topic, see the Twentieth Yearbook, Part I.)

NINETEENTH YEARBOOK, PART II (1920)

CLASSROOM PROBLEMS IN THE EDUCATION OF GIFTED CHILDREN

Theodore S. Henry

Dr. Henry summarized various types of flexible promotion schemes, described typical special rooms for gifted pupils, and then recounted at length the methods and results of an experimental room for gifted pupils organized at Urbana, Illinois. The closing chapters, in addition to a six-page bibliography, discuss the problem of adapting classroom methods to the training of gifted children, and present a series of eighteen specific recommendations for carrying on this type of educational endeavor. (For further discussion of this topic, see the Twenty-Third Yearbook, Part I.)

THE TWENTIETH YEARBOOK, PART I (1921)

SECOND REPORT OF THE SOCIETY'S COMMITTEE ON NEW MATERIALS OF INSTRUCTION

Frances Berry, Edna Keith, F. J. Kelly, W. N. Kerr, H. G. Lull, Nellie R. Olson, Nina Vandewalker, F. L. Whitney, and Numerous Collaborators

The Society's Committee (the same as that for the Nineteenth Yearbook, Part I), under the chairmanship of F. J. Kelly, appointed as sub-committee chairmen the persons listed above, who gathered and organized 295 detailed examples of new materials of instruction, and classified them for use in the kindergarten, the various elementary grades, the junior and the senior high school, and in special classes for the subnormal. These exercises, or 'projects,' all possess a degree of novelty and by the strong appeal they make to children are decidedly suggestive to teachers who are searching for material outside that of the regular textbooks or ordinary supplementary reading. This yearbook, like its predecessor on the same topic, may be regarded as a portion of the contribution made by this Society toward the reorganization of the curriculum.

THE TWENTIETH YEARBOOK, PART II (1921)

REPORT OF THE SOCIETY'S COMMITTEE ON SILENT READING

May A. Burgess, S. A. Courtis, C. E. Germane, W. S. Gray, H. A. Greene, Reginia R. Heller, J. H. Hoover, James A. O'Brien, J. L. Packer, Daniel Starch, W. W. Theisen, G. A. Yoakum, and Representatives of the School Systems of Cedar Rapids, Denver, Iowa City, and Racine

The Executive Committee of the Society appointed a Committee on Silent Reading, under the chairmanship of Earnest Horn, which gathered the material in this volume as its report. Section I comprises ten chapters concerned with investigations of various aspects of the problem of reading, as for instance, the difficulties encountered in teaching silent reading, the measurement of speed and comprehension of silent reading, the vocabularies and contents of readers, and the development of reading speed. Section II contains examples of concrete exercises which have actually been tried in the classroom for teaching silent reading. This yearbook may be regarded as intermediate in scope and purpose between the several treatments of reading in the earlier yearbooks on minimal essentials and the economy of time and the elaborate treatment of reading in the Twenty-Fourth Yearbook, Part I.

VOLUME EIGHT

TWENTY-FIRST YEARBOOK, Parts I and II (1922)

Intelligence Tests and Their Use

S. S. Colvin, Helen Davis, Bessie L. Gambrill, Henry W. Holmes, W. K. Layton, W. S. Miller, Rudolph Pintner, Agnes L. Rogers, H. O. Rugg, M. R. Trabue, E. L. Thorndike, and G. M. Whipple

Under the chairmanship of the late S. S. Colvin, this Committee of the Society produced this yearbook of 270 pages in the attempt to explain ''in a clear and accurate manner the theory, nature, and practical use of intelligence tests.'' Its two parts are bound in one cover. Part I treats of 'general intelligence,' its nature, how it may be measured, how mental tests have developed, and their essential characteristics. Part II treats in considerable detail ''the administrative uses of intelligence tests in various grades, beginning with the primary grade and ending with the college and university.'' In addition to a wide circulation among schoolmen, this yearbook has been extensively used for purposes of instruction in normal schools and colleges.

TWENTY-SECOND YEARBOOK, Part I (1923)

English Composition: Its Aims, Methods, and Measurement

Earl Hudelson

By means of questionnaires the author sought to discover from teachers of English what their actual aims and methods were with respect to composition. He next considered the means employed for determining the extent to which these aims were being attained and was led to devise and to standardize two scales for the measurement of English composition. His principal contention is that most composition scales test only how well the pupil can write upon that particular topic, not how well he can possibly write. For the latter purpose he proposes his Maximal Composition Ability Scale. To determine accurately from time to time the extent to which the pupils are exercising their real ability, he proposes another device known as the Typical Composition Ability Scale. Detailed instructions are given for the use of these two scales.

TWENTY-SECOND YEARBOOK, Part II (1923)

The Social Studies in the Elementary and Secondary School

A. S. Barr, J. J. Coss, Henry Harap, R. W. Hatch, H. C. Hill, Ernest Horn, C. H. Judd, L. C. Marshall, F. M. McMurry, Earle Rugg, H. O. Rugg, Emma Schweppe, Mabel Snedaker, and C. W. Washburne

This group of writers, under the direction of H. O. Rugg, has presented in this 324-page yearbook important and somewhat radical proposals concerning the portion of the curriculum devoted to the social studies. Section I analyzes current practices, shows how social science curricula came to be what they are, and points out needed changes. Section II presents samples of reorganized courses in this field in several schools. Section III discusses the method by which such reorganizations of the curriculum should be carried on. Section IV is a critical appraisal of F. M. McMurry of the proposed reorganizations. This volume may be regarded as one of several fore-runners of the proposed yearbooks on the Technique of Curriculum-Makiug. It applies, obviously, primarily to the geographical and historical portions of the curriculum.

VOLUME NINE

TWENTY-THIRD YEARBOOK, Part I (1924)

The Education of Gifted Children

B. T. Baldwin, Helen Davis, Lillie R. Ernst, F. N. Freeman, T. S. Henry,
Ernest Horn, H. O. Rugg, L. O. Smith, L. M. Terman, C. W. Waddle,
and G. M. Whipple, chairman (the Society's Committee)

assisted by

J. R. Benson, E. R. Breslich, Arthur Brogue, Margaret V. Cobb, R. R. Cook,
J. C. DeVoss, Anna M. Engel, E. M. Haney, H. C. Hill, K. J. Hoke,
Leta A. Hollingworth, A. J. Martin, E. L. Moyer, Mary L.
Patrick, W. C. Reavis, Grace A. Taylor, H. G. Townsend, C. W. Washburne, and W. L. Uhl

This extensive yearbook (443 pages of text) may be regarded as an attempt to gain further light and a more varied and comprehensive survey of the problem discussed in the Nineteenth Yearbook, Part II. Section I contains various reports and summaries of the more general aspects of the problem—the history of the movement for special training of the gifted, methods of locating such children, problems of organization and administration, the adaptation of the curriculum, non-intellectual traits of gifted children, etc. Section II presents numerous special studies of such children, with respect to their physical and mental traits, their educational achievements, their subsequent careers in the high school and university, and the outcomes of various school experiments in providing special training for them. Section III is a valuable annotated bibliography of 453 titles.

TWENTY-THIRD YEARBOOK, Part II (1924)

Vocational Guidance and Vocational Education for the Industries

A. H. Edgerton and Fifty Collaborators

This yearbook is one of the largest ever undertaken by the Society. The material for it was gathered and organized by Professor Edgerton from many sources and with the aid of half a hundred contributors. It affords, therefore, a comprehensive exposition of the present status of the branch of educational endeavor to which it is devoted. Section I, which deals with vocational guidance, gives detailed accounts of what is already being done in various city schools systems, both large and small, and in colleges and universities, also accounts of methods of training vocational counselors. Section II deals with vocational education for the industries. It shows what is being done in typical part-time, or continuation, schools and in typical day and evening industrial courses in smaller cities. Further, there is discussion of the training of workers in industry, the training of foremen, and the training of teachers for vocational industrial schools. Both sections are supplied with bibliographies.

VOLUME TEN

TWENTY-FOURTH YEARBOOK, Part I (1925)

Report of the National Committee on Reading

F. W. Ballou, W. S. Gray, Rose L. Hardy, Ernest Horn, Frances Jenkins,
S. A. Leonard, Estaline Wilson, and Laura Zirbes

Under the chairmanship of W. S. Gray, this Committee, appointed by Commissioner Tigert in January, 1923, subsidized by the Commonwealth Fund, and assisted by numerous school and university specialists, has used the avenue of publication afforded by this Society to present what is one of the most authoritative and most useful general discussions of the problem of reading that has been made available. Among the topics considered are: the aims of instruction in reading, a modern program of reading instruction for the elementary grades and the high school, methods of developing a meaningful vocabulary, the relation of reading to literature and the other content subjects, materials for instruction, standardized and informal reading tests, recognition of individual differences by diagnosis and remedial work. A feature of the book is the series of specific recommendations in which the members of the Committee, by discussion and experiment, have been able to concur.

TWENTY-FOURTH YEARBOOK, Part II (1925)

Adapting the Schools to Individual Differences

Franklin Bobbitt, B. R. Buckingham, S. A. Courtis, W. S. Gray, Ernest Horn,
Jessie Mackinder, Helen Parkhurst, A. H. Sutherland, Mary A. Ward,
C. W. Washburne, chairman (the Society's Committee)

assisted by

Cecilia Anderson, R. N. Brown, Grace E. Carter, F. E. Clerk, Mary H. Comings,
U. J. Hoffman, Hilda M. Holmes, W. H. Holmes, W. H. Kilpatrick,
S. A. Leonard, J. L. McCrory, H. L. Miller, W. C. Reavis,
Margaret Smith, A. J. Stoddard, Elizabeth T. Sullivan,
L. Belle Voegelein, and W. A. Wirt

Section I of this important yearbook describes the factors which under ordinary school conditions tend to produce maladjustments of pupils with respect to grading and rate of progress. Section II follows with a description of typical attempts to meet these difficulties by adjusting the school's organization and methods of instruction. Section III details statistical results of experiments in the individualization of instruction, with special reference to the work at Winnetka. Section IV discusses the various problems which are encountered in thus adapting schools, and Section V outlines the steps involved in launching a program of this sort. Section VI is a critique of these proposals, while Section VII comprises an annotated bibliography of 76 pages.

VOLUME ELEVEN

TWENTY-FIFTH YEARBOOK, Part I (1926)

The Present Status of Safety Education

M. B. Hillegas, A. B. Meredith, Z. E. Scott, A. W. Whitney, S. J. Williams, and G. M. Whipple, chairman (of the Society's Committee)

assisted by

Rena Allen, Mary N. Arrowsmith, Harriet E. Beard, Mary B. Day, Ruth C. Earle, H. S. Gruver, J. H. Harvey, Max Henig, Evelyn T. Holston, W. D. Keefer, Frances H. Miner, E. G. Payne, M. S. Pittman, Mary O. Pottenger, Idabelle Stevenson, and Ruth Streitz

This yearbook represents the product of coöperation between this Society and the Education Division of the National Safety Council. It traces the development of the safety movement in industry, in the schools, and in civic administration, shows how safety education has been introduced into various school systems, presents at great length and in full detail the materials and methods of a program of safety education for the elementary schools, with additional suggestions for the adaptation and extension of this program for use in high schools, and in rural and vocational schools. The volume concludes with a general discussion of the significance of safety education and the outlook for its future development.

TWENTY-FIFTH YEARBOOK, Part II (1926)

Extra-Curricular Activities

F. C. Ayer, C. R. Foster, E. K. Fretwell, L. V. Koos, J. G. Masters, M. C. Prunty, W. C. Reavis, Earle Rugg, and P. W. Terry (the Society's Committee)

assisted by

E. H. Chappelle, F. Fickinger, C. E. Hagie, M. B. Horner, H. C. McKown, C. J. Pieper, E. S. Simmonds, and Clifford Woody

Under the chairmanship of L. V. Koos, this Committee and its associates, by extensive canvassing of the country, has brought together a comprehensive statement of the present status of extra-curricular activities in the public schools of the United States. The Committee has not sought primarily to evaluate these varied activities or to prescribe rules for their inauguration or control, but rather to state current practices with respect to such matters as honor societies, publications, student government organizations, debating, music, athletics, assemblies, and clubs of all kinds. These are discussed for elementary, for junior-high, and for senior-high schools. Special attention is paid to the relation of the teacher to these various enterprises.

VOLUME TWELVE

TWENTY-SIXTH YEARBOOK, Parts I and II (1927)

The Foundations and Technique of Curriculum Construction

William C. Bagley, Franklin Bobbitt, Frederick G. Bonser, Werrett W. Charters,
George S. Counts, Stuart A. Courtis, Ernest Horn, Charles H. Judd,
Frederick J. Kelly, William H. Kilpatrick, Harold Rugg (Chairman),
George A. Works (Members of the Society's Committee)

Associated Contributors

Otis W. Caldwell, Walter D. Cocking, Ellsworth Collings, Flora J. Cooke, J. L.
Flanders, Harry O. Gillet, John A. Hockett, Marietta Johnson, Margaret
Naumburg, Jesse H. Newlon, Raymond W. Osborne, Henry Carr
Pearson, C. A. Phillips, Caroline Pratt, William C. Reavis, Ethel I.
Salisbury, E. M. Sipple, Eugene R. Smith, A. L. Threlkeld,
Carleton Washburne

From time to time, in a dynamic society it is imperative that we stand aside from the movement of affairs to review trends, to assay products, to map out new paths. The chief purpose of this Yearbook is a study and appraisal so far as agreement is possible of curriculum making in American schools—past and present.

For two years the Society's Committee was engaged in the development of one phase or another of the work, either in collecting and appraising the contemporary situation, in studying the chief trends of development in the past century or in prolonged round table conferences over similarities and divergences in educational theory.

This Yearbook presents three results of their efforts: a historical review, a description and evaluation of contemporary practices, and a statement of foundational principles for curriculum reconstruction.

Part I of this Yearbook attempts a description and critical synthesis of curriculum-making, past and present. Part II presents the committee's joint platform for curriculum-construction—a general statement of the foundational principles upon which the committee desires to see the next steps taken in the reconstruction of the school curriculum. Also the frank and interesting individual statements of the views of the several members of the committee.

VOLUME THIRTEEN

TWENTY-SEVENTH YEARBOOK, PART I (1928)

NATURE AND NURTURE: THEIR INFLUENCE UPON INTELLIGENCE

Lewis M. Terman, Barbara S. Burks, Truman L. Kelley, E. L. Thorndike, Raymond R. Willoughby, Harold E. Jones, Helen L. Koch, Gladys G. Tallman, Mildred Burlingame, Calvin P. Stone, Frank N. Freeman, K. J. Holzinger, Blythe C. Mitchell, Agnes L. Rogers, Dorothy Durling, Katharine McBride, Joseph Peterson, Katherine Murdoch, Doris Maddow, Nettie L. Berg, Gertrude Hildreth, Florence L. Goodenough, Carolyn Hoefer, Mattie C. Hardy, Lois Doe-Kulmann, Arnold Gesell, Janet A. Matthew, Bertha M. Luckey, Katharine B. Greene, Mary L. Casey, Helen P. Davidson, Doris I. Harter, and Arthur I. Gates

Part I contains a very useful and important chapter furnished by Mrs. Herman Ramsperger of Stanford University on difficulties met in the statistical handling of the material of nature-nurture studies. Her section on the discovery and expression of degrees of causation among groups of dependent factors is particularly important, including as it does discussion of path coefficients and coefficients of determination. Other chapters contain a study of the intelligence of siblings by E. L. Thorndike of Teachers College, Columbia University, a comparison of white and negro children in rational learning by Joseph Peterson of George Peabody College for Teachers, a study of the effect of the nursery school upon intelligence by Florence L. Goodenough of the University of Minnesota, and a checking of the effects of training by A. I. Gates of Teachers College, Columbia University. These are grouped under seven heads: (1) Family resemblance; (2) intelligence and social environment; (3) race differences; (4) intelligence and schooling; (5) relation to health or physique; (6) constancy of the IQ; and (7) effects of coaching or special training.

TWENTY-SEVENTH YEARBOOK, PART II (1928)

NATURE AND NURTURE: THEIR INFLUENCE UPON ACHIEVEMENT

Lewis M. Terman, Leta S. Hollingworth, Margaret V. Cobb, J. D. Heilman, Katherine M. Denworth, F. P. Obrien, Howard Taylor, M. J. Van Wagenen, William A. McCall, T. C. Holy, Lonzo Jones, G. M. Ruch, L. Dewey Anderson, June E. Downey, Mark A. May, Hugh Hartshorne, Guy M. Whipple, Joseph Peterson, M. C. Barlow, P. R. Farnsworth, and Barbara S. Burks

The investigations of Part II of the Yearbook are grouped under five heads: (1) Achievement and intelligence; (2) achievement and school attendance; (3) achievement and teaching ability or school methods; (4) achievement and school expenditures; and (5) achievement and effort.

The basic question asked in Part II is as to whether (1) native ability or (2) public school experience determines levels of pupil achievement in school tasks. The most careful answer is offered in Chapter II, where J. D. Heilman of Colorado State Teachers College reports the use among a group of 828 ten-year old public school children in Denver of expressions of amount for (1) mental age, (2) school attitude, and (3) home status to determine school achievement in terms of educational age. He uses Sewell Wright's path coefficient method and finds that at least ''50 percent of the variation in educational age'' is due to heredity as measured in the study. School attendance alone accounts for but about 5 percent of the differences in school achievement found in his group of ten-year old pupils, and if the influence of school attendance in combination with mentality be added, not over 13 percent to 19 percent of educational age can be attributed to educational exposure. The implications of these findings for probable necessary length of elementary education are very apparent. The chairman of the Yearbook Committee, L. M. Terman, says, ''Results such as those of Heilman open the question as to whether eight years of school attendance is really necessary to bring pupils up to the standard usually achieved by the eighth grade. One wonders whether in the four or five years between ten and fourteen they might not learn to read, write, and spell as well, and master as much arithmetic, history, and geography as they would be likely to in eight years.''

VOLUME FOURTEEN

TWENTY-EIGHTH YEARBOOK, PARTS I AND II

PRESCHOOL AND PARENTAL EDUCATION

Prepared by the Society's Committee

B. T. Baldwin (deceased), Arnold Gesell, Patty S. Hill, Douglas Thom, Edna White, Helen T. Woolley, and Lois H. Meek (Chairman)

Assisted by

W. E. Blatz, Agnes Burke, Grace Caldwell, Lelah M. Crabbs, Bess V. Cunningham, Mary D. Davis, Charlotte G. Garrison, Ernest Groves, Sidonie M. Gruenberg, Ruth Haefner, Francis A. Hungerford, Harriet Johnson, H. E. Jones, Grace Langdon, Elizabeth Lord, Lawson Lowrey, Elizabeth Moore, Mary Murphy, Winifred Rand, Mae Raymond, Mandel Sherman, G. S. Stevenson, Mary Sweeny, Nell B. Taylor, Flora Thurston, Leona Vincent, Beth Wellman, C. A. Wilson, and Elizabeth Woods

The Twenty-Eighth Yearbook is the most significant contribution that has been made to the literature of preschool and parental education. A request for a yearbook in this field was made to the National Society for the Study of Education in February, 1925, and the committee was formally organized in October, 1925. Dr. Lois Hayden Meek, Educational Secretary for the American Association of University Women, was appointed chairman and the other members of the committee were chosen to represent various aspects of preschool and parental education; Dr. Bird T. Baldwin and Dr. Arnold Gesell, research in child development; Professor Patty Smith Hill, education of young children; Miss Edna N. White, home economics aspect of preschool and parental education; Dr. Helen T. Woolley, psychological aspects of personality problems of childhood; Dr. Douglas Thom, the psychiatric aspect of child problems. A generous grant from the Laura Spelman Rockefeller Memorial, supplementing the appropriation of the National Society for the Study of Education, made possible the work of the Committee.

The seven members of the Committee and the twenty-nine contributors associated with them, have assembled and presented in the Yearbook a most comprehensive survey of the present status of preschool and parental education. In setting forth the Committee's purpose for the Yearbook, Dr. Meek says in the introduction: ''The Committee hopes that the present yearbook will help to show the trends of the movement, to point out the need for carefully trained personnel, to emphasize the varied influences of home, school and community life, and to focus attention on the total aspect of child development—physical, emotional and social, as well as intellectual.'' She further states that the Committee worked and thought together on practically every part of the book in an effort to unify the contributions of the many who supplied the wealth of data, and to present the material concerning the education of children and parents from a point of view which would integrate a movement participated in by many groups with varying objectives and backgrounds.

Throughout the book the term preschool refers ''to the whole period of infancy and early childhood, from birth up to elementary school entrance at the age of six or seven.'' The term parental education is used ''in its broadest sense to include all methods and devices of adult education intended to assist parents in the understanding and care of their children.''

The book is divided into two parts—Part I on organization and development of preschool and parental education, and Part II on research and method in this field. In Part I, the history of the movement is given, including a brief discussion of the beginnings of the kindergarten, the Montessori school, the nursery school, child health centers, play schools and child study groups. The following general considerations underlying preschool and parental education are stressed: the importance of the preschool years from the standpoint of growth and development, the influence of home and parents, the need of supplementary educational agencies and fundamentally of educating parents themselves. The present organization of education for preschool children is given in considerable detail covering the family as an agency, day nurseries, maternity and infant welfare centers, the clinics, nursery schools and kindergartens. Part II also includes a survey of current programs in parental education and experiments in preparental training, and indicates what is being done in professional training for research and instruction in preschool education, in the professional training of nursery school teachers, and in the training of leaders in parental education.

Part II, on research and method, opens with research activities in the field of child development, indicating the present status of research in child development and citing the outstanding studies of motor, language, intellectual, emotional and social development and of physical growth. A section follows on educating preschool children, with a thorough discussion of child activities, including those leading to the establishment of routine habits, play, art experiences, language and literature and social development. Provision for individual differences and the records of young children are also introduced. A concluding section deals with methods and materials for the education of parents and of practical ways of educating parents and teachers to the value of mental hygiene.

The Twenty-Eighth Yearbook is a very valuable source book in the field of preschool and parental education—a book which administrators, supervisors, teachers and parents interested in general or specialized education for the preschool child or the parent will find an indispensable addition to their libraries.

VOLUME FIFTEEN

TWENTY-NINTH YEARBOOK, PARTS I AND II (1930)

REPORT OF THE SOCIETY'S COMMITTEE ON ARITHMETIC

W. A. Brownell, B. R. Buckingham, G. T. Buswell, C. E. Greene, R. L. West,
F. B. Knight, (Chairman)

Assisted by

E. A. Beito, J. C. Brown, L. J. Brueckner, J. R. Clark, W. F. Dearborn,
Arthur Edwards, H. L. Harap, Ernest Horn, C. H. Judd, Fred Kelly,
L. A. King, R. H. Lane, Josephine MacLatchy, C. R. Mead, R. L.
Morton, Elma A. Neal, G. M. Norem, W. J. Osburn, J. R.
Overman, Isidoro Panlasigui, Harriet E. Peet, F. G.
Pickell, A. C. Repp, G. M. Ruch, C. W. Stone,
Florence Stratemeyer, and C. W. Washburne

The Twenty-Ninth Yearbook of the National Society for the Study of Education was prepared by the Society's committee on arithmetic, of which F. B. Knight is chairman, and the membership includes W. A. Brownell, B. R. Buckingham, G. T. Buswell, C. E. Greene, and R. L. West. Thirty other active members of the Society assisted the committee in the preparation of this 700 page report, or acted as a special reviewing committee, whose critique of the work as a whole appears at the end of the Yearbook.

The Twenty-Ninth Yearbook is divided into two parts. Part I, *Some Aspects of Modern Thought on Arithmetic,* contains an article on ''The Social Value of Arithmetic,'' by B. R. Buckingham; one on ''The Arithmetic Curriculum,'' by West, Greene, and Brownell; on ''Some Considerations of Method,'' by F. B. Knight; on ''Testing and Diagnosis,'' by Greene and Buswell; and on ''The Training of Teachers,'' by B. R. Buckingham.

Part II, *Research in Arithmetic,* contains a study of techniques by W. A. Brownell, a critical survey of previous research in arithmetic, by G. T. Buswell, and reports of eleven hitherto unpublished studies on various pertinent topics. The Appendix contains a *Critique of the Yearbook* by the reviewing committee, Leo J. Brueckner, chairman.

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